



March 22, 2019

Mr. Robert LaColla  
Supervisor – Town of Fishkill  
807 Route 52  
Fishkill, NY 12524

RE: Quarterly Groundwater Sample Collection  
February 2019  
Snook Road Well Field  
(T) Fishkill, New York

Dear Mr. LaColla:

The following is a summary of the results from the February 2019 quarterly groundwater sample collection event completed by LBG Hydrogeologic & Engineering Services, P.C. (LBGHES), member of WSP, at the Snook Road Well Field located on Snook Road in the Town of Fishkill, New York (figure 1). A quarterly groundwater sampling program was previously conducted at the well field from June 2009 through July 2010. The sampling program was resumed in May 2012 and continues through the present.

Groundwater samples were collected from four monitoring well clusters and the two production wells at the well field during the sampling event on February 27, 2019. The well locations are shown on figures 2, 3 and 4 and copies of the monitoring well diagrams are included in Appendix I.

### **Groundwater Sample Collection**

Groundwater samples were collected from monitoring wells MW-1A, MW-1B, MW-2A, MW-2B, MW-3A, MW-3B, MW-4A and MW-4B on February 27, 2019. The monitoring well designations A and B signify shallow (crossing the water table) and deep (80 feet) screen settings, respectively.

Depth-to-water measurements collected from the monitoring wells on February 27 are shown on Table 1 along with their associated groundwater elevations. Groundwater contour maps showing the direction of groundwater flow are included on Figures 2 and 3 for the shallow and deep wells, respectively. During this groundwater sampling event, the direction of groundwater flow was generally east to west in the shallow and deep aquifers at the well field.

Three standing well volumes were evacuated from each monitoring well prior to the collection of the groundwater samples. Samples from the monitoring wells and Production Wells T-1 and T-2 collected on February 27 were analyzed for sodium and chloride. In addition, samples collected from MW-1A and MW-1B were analyzed for volatile organic compounds (VOCs). The samples were packed on ice after collection and sent to York Analytical Laboratory (York) located in Stratford, Connecticut for analysis. A copy of the York laboratory report for this sampling event is included in Appendix II.

## **Water-Quality Results**

Table 2 contains a summary of the sodium and chloride sample results for the monitoring wells from all quarterly sampling events conducted by LBGHES at the well field to date. The sample results from February 27 are also shown on figure 4. Graphs depicting the change in sodium and chloride concentrations in the monitoring wells over time are included in Appendix III.

The sodium concentrations in the shallow monitoring wells sampled on February 27 ranged from 77.4 mg/L (milligrams per liter) to 132 mg/L and the sodium concentrations in the deep wells ranged from 89.3 mg/L to 159 mg/L. Chloride concentrations in the shallow monitoring wells ranged from 93.9 mg/L to 229 mg/L and the chloride concentrations in the deep wells ranged from 104 mg/L to 270 mg/L. The chloride concentration in MW-3B at 270 mg/L exceeded the New York State Department of Health (NYSDOH) maximum contaminant level (MCL) for chloride of 250 mg/L. All other chloride concentrations in the monitoring wells were below the MCL value.

Production well T-1 has been sampled for sodium and chloride twice per month since January 2009 by the Town's water operators, CAMO Pollution Control. Bimonthly sodium and chloride sample collection from production well T-2 was started in January 2014. Graphs of the sodium and chloride concentrations reported in T-1 compared to monthly precipitation and pumping withdrawals are included in Appendix IV. A graph of the sodium and chloride concentrations reported in T-2 compared to monthly precipitation is included in Appendix V.

Table 3 shows the sodium and chloride water-quality results from the production wells T-1 and T-2 (aka P-1). The sodium concentrations in Production Well T-1 and T-2 on February 27 in the samples collected by LBGHES were 128 mg/L and 104 mg/L, respectively. The NYSDOH does not currently have an established MCL for sodium. However, the sodium concentrations in the production wells are below the NYSDOH recommended limit of 270 mg/L, but are above the NYSDOH reporting limit for people on severely sodium restricted diets of 20 mg/L. The chloride concentrations in Production Wells T-1 and T-2 on February 27 in the samples collected were 169 mg/L and 144 mg/L, respectively. The concentrations in T-1 and T-2 were below the NYSDOH MCL for chloride of 250 mg/L during this sampling event.

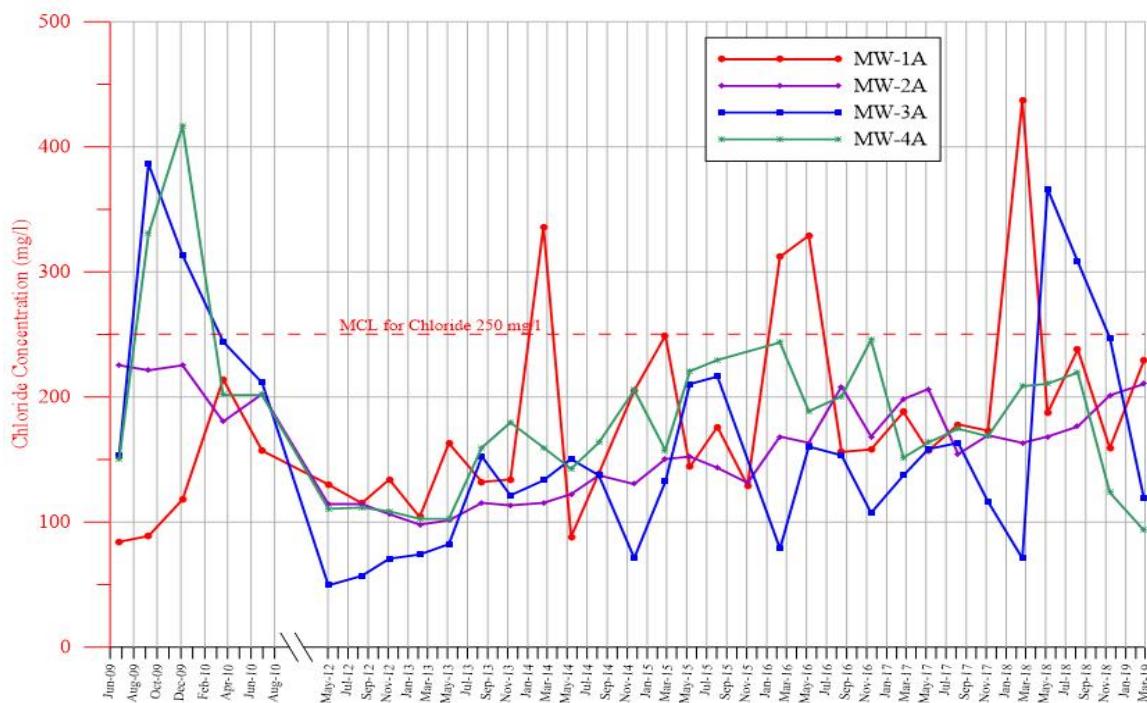
Groundwater samples were also collected from MW-1A and MW1-B for analysis for VOCs during the February 2019 sampling event. The results of the VOC analyses are provided on table 4. A trace concentration of chloroform at 0.9 ug/L (micrograms per liter) was detected in MW-1A. Prior trace detections of chloroform have been reported sporadically in samples from MW-1A in November 2018, May 2017, July 2010, and June and September 2009. All detections have been less than 1 ug/L and all were significantly below the MCL of 80 ug/L for chloroform. The trace detection of chloroform of 0.9 ug/L does not appear to be a significant concern at this time. No other VOCs were detected in MW-1A or MW-1B during this sampling event.

## **Discussion**

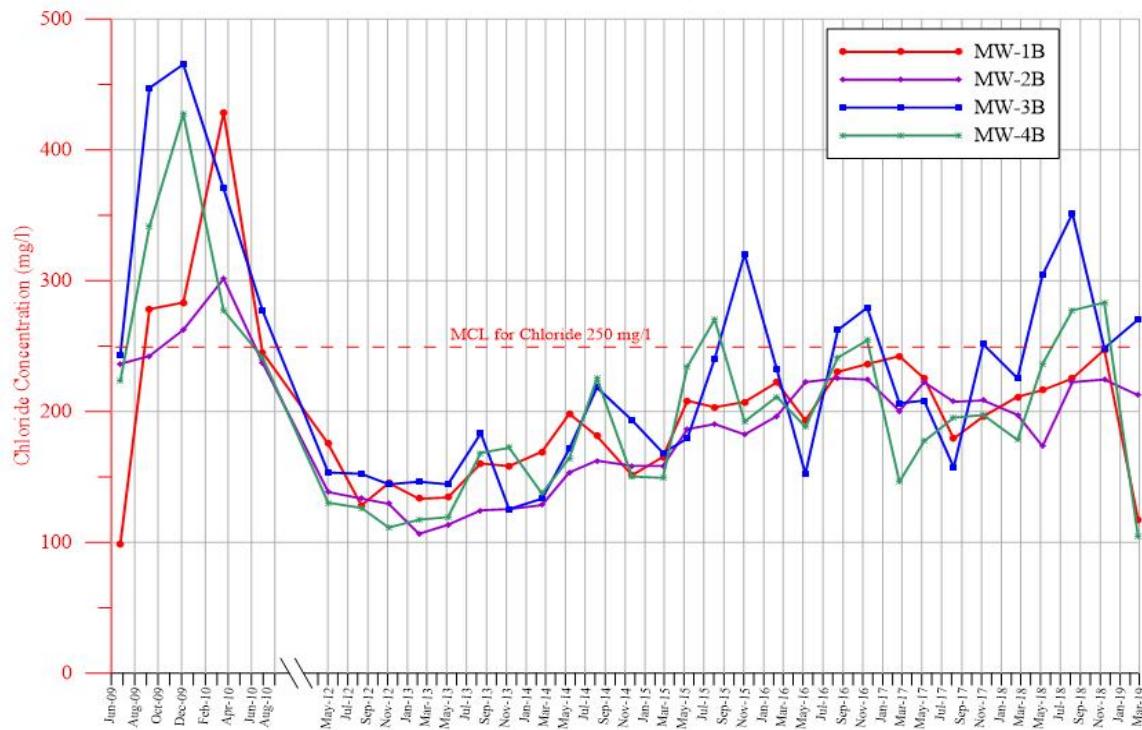
A significant decrease in the chloride concentrations at the Snook Road well field occurred in 2011 as a result of abnormally high precipitation and a very mild 2011/2012 winter season. Because of the decrease in the chloride concentration in the production well, T-1 was placed on as the primary source of water for the Merritt Park Water District in April 2012, with the Village of Fishkill water as the back-up supply. The quarterly groundwater sampling program was also resumed at the well field in May 2012 to monitor sodium and chloride concentrations in the groundwater.

Overall, the quarterly groundwater sampling program has shown an increase in the chloride concentrations in both the shallow and deep monitoring wells at the well field beginning in 2013. However, during this most recent sampling event in February 2019, significant decreases in chloride values were seen in monitoring wells MW-1B, 4A and 4B. The graphs below show an overlay of all chloride concentrations from the shallow and deep monitoring wells.

### Summary of Chloride Concentrations from Shallow Screened Monitor Wells



### Summary of Chloride Concentrations from Deep Screened Monitor Wells

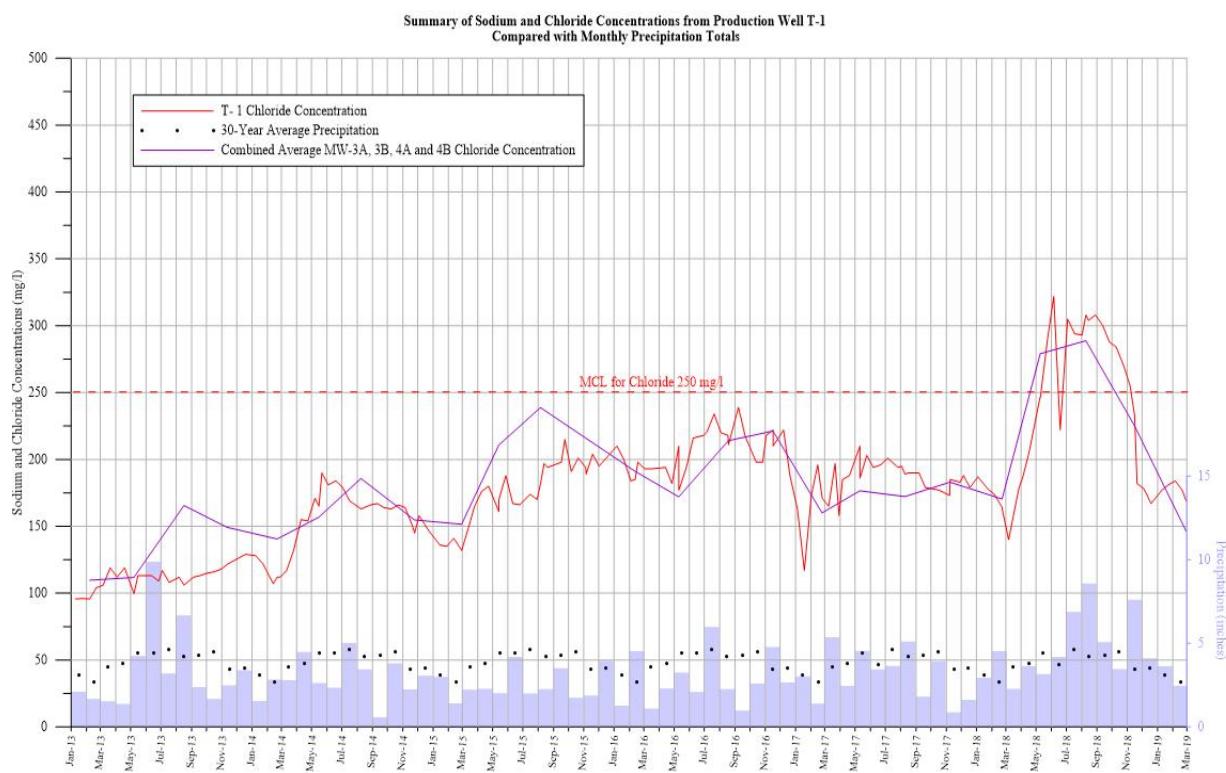


The changes in chloride concentrations in groundwater (increases and decreases) are dependent on the lag time between the application of road salt, its infiltration into groundwater, and its travel time through the aquifer. For example, a rise in the chloride concentration in MW-1A occurs in February of most years. These rises in concentration in this shallow-screened monitoring well occur near the time of

the actual road salt application because the water table in this well is shallow (therefore quickly recharged by surface-water runoff infiltration) and the well is close to the roadway. For the deep screened monitoring wells and production wells, the peak chloride concentrations typically occur later in the year because of the travel time of the chloride through the overburden formation to the deeper aquifer.

The water-quality data starting in 2014 for the monitoring wells and production wells indicate that seasonal loading of chloride is reoccurring at the well field. Based on the concentration data from the last three years, compounding of chloride from seasonal loading is continuing and the chloride concentrations in the monitoring wells showed an overall rise through November 2018. This overall rise continued in five of the eight monitoring wells in the February 2019, except for monitoring wells MW-4A, 1B and 4B. These three monitoring wells showed a notable decline in chloride concentration in the February 2019 samples collected.

The monitoring well clusters MW-3A/B and MW-4A/4B are upgradient of the production wells and are representative of the groundwater entering the well field. Monitoring wells MW-3A/B are indicative of recharge from runoff from I-84 and MW-4A/B of recharge from a mix of Snook Road and I-84. The graph below is an overlay of the chloride concentration in production well T-1 and the combined average chloride values from monitoring wells MW-3A, 3B, 4A and 4B starting in 2013. The similarity of the patterns strongly indicates that the source of the chlorides is from the incoming groundwater from the upgradient watershed.



Similar to the monitoring wells, production wells T-1 and T-2 have shown an overall increasing chloride trend since 2013. As seen on the above graph, a steep increase in chloride concentration was observed in production well T-1 starting in late March 2018. The concentration reached 322 mg/L on June 18, and stayed in the range of 300 mg/L through early September. In late September 2018, the chloride in T-1 began a steady decline. This decline coincides with the typical annual decrease in chloride concentration that occurs in the production well at the end of summer; however, the decrease in

concentration is greater in magnitude than what has been observed over the previous several years. The sharp decline is likely the result of above-average precipitation began in the late summer of 2018 and has continued into early 2019.

The chloride concentration in T-2 also showed a similar rise starting in early March 2018, from 145 mg/L to a range of 220 mg/L to 230 mg/L. A decline in chloride concentration in well T-2 has also occurred, although the decrease in this well started in early November 2018. It cannot be determined with certainty from the available data why the peak concentrations in T-2 are lower than in T-1. However, it is hypothesized that the upgradient well T-1 acts as somewhat of a hydraulic block in front of T-2.

Based on past data, the annual peak in chloride concentrations in the deep aquifer at the well field where the production wells are screened typically occurs in late summer/early fall, which is what occurred in 2018 also. As expected, the concentrations in the production wells begin to decline; however, the decrease in concentrations has been greater than anticipated likely because of the above-average precipitation received which started in late July 2018. The decreasing concentrations may continue if above-average precipitation continues to be received. However, LBGHES recommends that the Town continue to consider an increase in blending with the Village of Fishkill water to manage the increase in chloride concentrations in the future because long-term precipitation conditions are unpredictable.

## **Conclusions**

The combination of abnormally high precipitation in 2011 and a very mild 2011/2012 winter season requiring limited road salt application contributed to a notable decrease in chloride concentrations at the Snook Road well field at that time. Because of the decrease in the chloride concentration in the production well, T-1 was placed on as the primary source of water for the Merritt Park Water District in April 2012, with the Village of Fishkill water as the back-up supply.

Groundwater samples were collected from MW-1A and MW1-B for analysis for VOCs during the February 2019 sampling event. A trace concentration of chloroform at 0.9 ug/L was reported in the sample from MW-1A. Prior trace detections of chloroform have been reported sporadically in samples from MW-1A in November 2018, May 2017, July 2010, and June and September 2009. All detections have been less than 1 ug/L and all were significantly below the MCL of 80 ug/L for chloroform. The trace reported chloroform detection of 0.9 ug/L does not appear to be a significant concern at this time. No other VOCs were detected in MW-1A or MW-1B during this sampling event, and since sampling began in 2009 no significant detection of VOCs have occurred in monitoring wells MW-1A or MW-1B.

The water-quality data starting in 2013 for the monitoring wells and production wells indicate that seasonal loading of chloride is reoccurring at the well field. The chloride concentrations in the monitoring wells showed an overall rise through November 2018. This overall rise continued in five of the eight monitoring wells in the February 2019, except for monitoring wells MW-4A, 1B and 4B. These three monitoring wells showed a notable decline in chloride concentration in the February 2019 samples collected.

Production wells T-1 ad T-2 have shown a notable decrease in concentration, starting in August 2018 and November 2018, respectively. The declines of chloride concentrations in the production wells is likely the result of above-average precipitation that has been received since July 2018.

Despite the recent decrease in chloride concentration in the production wells, seasonal loading of chloride remains a concern at the well field. LBGHES recommends that the Town continue to consider an increase in blending with the Village of Fishkill water to manage chloride concentrations in the future.



Should you have any questions, please contact Stacy directly at (475) 882-1723.

Kind regards,

LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C.

A handwritten signature in black ink that reads "Stacy Stieber".

Stacy Stieber, CPG, PG(NY)  
Lead Hydrogeologist

Reviewed by:

A handwritten signature in black ink that reads "Thomas P. Cusack".

Thomas P. Cusack, CPG, PG(NY)  
Senior Supervising Hydrogeologist

SS:cmm

Enclosures

cc:            J. Upright - Dutchess Co. DOH  
                M. Tremper - Camo Pollution

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## **TABLES**

**TABLE 1**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Depth-to-Water Measurements Collected**

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-1A	234.06	6/26/09	22.90	211.19
		9/10/09	26.40	207.69
		12/7/09	25.24	208.85
		3/22/10	17.83	216.26
		7/1/10	26.21	207.91
		5/4/12	25.53	208.56
		8/14/12	26.14	207.92
		11/6/12	24.74	209.32
		2/7/13	23.85	210.21
		5/7/13	24.88	209.18
		8/16/13	24.70	209.36
		11/11/13	28.28	205.78
		2/20/14	24.96	209.10
		5/15/14	22.02	212.04
		8/8/14	24.47	208.59
		11/24/14	27.38	206.68
		2/27/15	24.88	209.18
		5/13/15	23.84	210.22
		8/5/15	28.07	205.99
		11/5/15	30.30	203.76
		2/12/16	25.96	208.10
		5/10/16	24.24	209.82
		8/18/16	25.41	208.41
		11/16/16	28.25	205.81
		2/23/17	22.56	211.50
		5/10/17	22.35	211.71
		8/9/17	26.62	207.44
		11/8/17	29.14	204.92
		2/21/18	24.29	209.77
		5/9/18	22.27	211.79
		8/9/18	24.32	209.74
		11/15/18	20.47	213.59
		2/27/19	22.16	211.90
MW-1B	233.84	6/26/09	22.65	211.19
		9/10/09	26.35	207.49
		12/7/09	24.91	208.93
		3/22/10	17.46	216.38
		7/1/10	26.17	207.67
		5/4/12	25.47	208.37
		8/14/12	25.88	207.96
		11/6/12	24.52	209.32
		2/7/13	23.61	210.23
		5/7/13	24.61	209.23
		8/16/13	24.44	209.40
		11/11/13	28.07	205.77
		2/20/14	24.73	209.11
		5/15/14	21.77	212.07
		8/8/14	25.26	208.58
		11/24/14	27.15	206.69
		2/27/15	24.62	209.22
		5/13/15	23.58	210.26
		8/5/15	27.84	206.00

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**(T) FISHKILL, NEW YORK**

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**Summary of Depth-to-Water Measurements Collected**

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-1B (continued)	233.84	11/5/15	30.31	203.53
		2/12/16	25.71	208.13
		5/10/16	24.00	209.84
		8/18/16	25.12	208.23
		11/16/16	27.99	205.85
		2/23/17	22.29	211.55
		5/10/17	22.10	211.74
		8/9/17	26.37	207.47
		11/8/17	28.90	204.94
		2/21/18	24.02	209.82
		5/9/18	22.00	211.84
		8/9/18	24.00	209.84
		11/15/18	20.19	213.65
		2/27/19	21.90	211.94
MW-2A	235.82	6/26/09	24.65	211.17
		9/10/09	24.76	211.06
		12/7/09	27.05	208.77
		3/22/10	19.57	216.25
		7/1/10	28.17	207.65
		5/4/12	27.42	208.40
		8/14/12	27.92	207.90
		11/6/12	26.60	209.22
		2/7/13	25.64	210.18
		5/7/13	26.66	209.16
		8/16/13	26.45	209.37
		11/11/13	30.00	205.82
		2/20/14	26.75	209.07
		5/15/14	23.77	212.05
		8/8/14	27.25	208.57
		11/24/14	29.23	206.59
		2/27/15	26.71	209.11
		5/13/15	25.61	210.21
		8/5/15	29.82	206.00
		11/5/15	31.80	204.02
		2/12/16	27.80	208.02
		5/10/16	26.05	209.77
		8/18/16	27.20	208.14
		11/16/16	29.98	205.84
		2/23/17	24.37	211.45
		5/10/17	24.20	211.62
		8/9/17	28.39	207.43
		11/8/17	30.90	204.92
		2/21/18	26.10	209.72
		5/9/18	24.05	211.77
		8/9/18	26.09	209.73
		11/15/18	22.22	213.60
		2/27/19	23.96	211.86
MW-2B	235.86	6/26/09	24.60	211.27
		9/10/09	24.55	211.32
		12/7/09	26.99	208.88
		3/22/10	19.44	216.43
		7/1/10	28.13	207.75

**TABLE 1**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Depth-to-Water Measurements Collected**

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-2B (continued)	235.86	5/4/12	27.42	208.45
		8/14/12	27.88	207.98
		11/6/12	26.54	209.32
		2/7/13	25.54	210.32
		5/7/13	26.67	209.19
		8/16/13	26.46	209.40
		11/11/13	30.16	205.70
		2/20/14	26.72	209.14
		5/15/14	23.67	212.19
		8/8/14	27.25	208.61
		11/24/14	29.18	206.68
		2/27/15	26.70	209.16
		5/13/15	25.58	210.28
		8/5/15	29.92	205.94
		11/5/15	31.80	204.06
		2/12/16	27.78	208.08
		5/10/16	26.00	209.86
		8/18/16	27.15	208.26
		11/16/16	30.03	205.83
		2/23/17	24.24	211.62
		5/10/17	24.15	211.71
		8/9/17	28.44	207.42
		11/8/17	30.93	204.93
		2/21/18	25.99	209.87
		5/9/18	23.96	211.90
		8/9/18	26.00	209.86
		11/15/18	22.03	213.83
		2/27/19	23.83	212.03
MW-3A	239.23	6/26/09	27.35	211.98
		9/10/09	29.55	209.73
		12/7/09	30.02	209.26
		3/22/10	21.57	217.71
		7/1/10	31.33	207.94
		5/4/12	30.71	208.57
		8/14/12	31.00	208.23
		11/6/12	29.58	209.65
		2/7/13	28.46	210.77
		5/7/13	29.88	209.35
		8/16/13	29.70	209.53
		11/11/13	33.38	205.85
		2/20/14	29.39	209.84
		5/15/14	26.46	212.77
		8/8/14	30.10	209.13
		11/24/14	32.41	206.82
		2/27/15	26.35	212.88
		5/13/15	28.66	210.57
		8/5/15	33.23	206.00
		11/5/15	34.56	204.67
		2/12/16	30.91	208.32
		5/10/16	28.89	210.34
		8/18/16	30.23	208.58
		11/16/16	33.36	205.87

**TABLE 1**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Depth-to-Water Measurements Collected**

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-3A (continued)	239.23	2/23/17	26.80	212.43
		5/10/17	26.80	212.43
		8/9/17	31.66	207.57
		11/8/17	34.28	204.95
		2/21/18	28.69	210.54
		5/9/18	26.78	212.45
		8/9/18	28.94	210.29
		11/15/18	24.20	215.03
		2/27/19	26.57	212.66
MW-3B	239.42	6/26/09	27.35	212.09
		9/10/09	29.87	209.57
		12/7/09	30.06	209.38
		3/22/10	21.69	217.75
		7/1/10	31.40	208.06
		5/4/12	30.66	208.78
		8/14/12	31.02	208.40
		11/6/12	29.45	209.97
		2/7/13	28.48	210.94
		5/7/13	29.93	209.49
		8/16/13	29.70	209.72
		11/11/13	33.54	205.88
		2/20/14	26.43	209.42
		5/15/14	26.46	212.96
		8/8/14	30.51	208.91
		11/24/14	32.52	206.90
		2/27/15	25.98	213.44
		5/13/15	28.62	210.80
		8/5/15	33.35	206.07
		11/5/15	35.17	204.25
		2/12/16	30.92	208.50
		5/10/16	28.68	210.74
		8/18/16	30.13	208.96
		11/16/16	33.20	206.22
		2/23/17	26.53	212.89
		5/10/17	26.75	212.67
		8/9/17	31.77	207.65
		11/8/17	34.35	205.07
		2/21/18	28.16	211.26
		5/9/18	26.72	212.70
		8/9/18	28.90	210.52
		11/15/18	23.99	215.43
		2/27/19	26.53	212.89
MW-4A	235.85	6/26/09	23.90	212.01
		9/10/09	26.20	209.71
		12/7/09	26.55	209.36
		3/22/10	18.40	217.51
		7/1/10	27.62	208.35
		5/4/12	27.19	208.72
		8/14/12	27.55	208.30
		11/6/12	25.99	209.86
		2/7/13	25.03	210.82
		5/7/13	26.39	209.46

**TABLE 1**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Depth-to-Water Measurements Collected**

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-4A (continued)	235.85	8/16/13	26.20	209.65
		11/11/13	29.94	205.91
		2/20/14	26.11	209.72
		5/15/14	23.07	212.78
		8/8/14	26.94	208.91
		11/24/14	29.00	206.85
		2/27/15	29.90	205.95
		5/13/15	25.17	210.68
		8/5/15	29.75	206.10
		11/5/15	30.82	205.03
		2/12/16	27.43	208.42
		5/10/16	25.27	210.58
		8/18/16	26.67	209.06
		11/16/16	29.76	206.09
		2/23/17	23.25	212.60
		5/10/17	23.25	212.60
		8/9/17	28.19	207.66
		11/8/17	30.78	205.07
		2/21/18	24.96	210.89
		5/9/18	23.30	212.55
		8/9/18	25.45	210.40
		11/15/18	20.76	215.09
		2/27/19	23.12	212.73
MW-4B	235.83	6/26/09	23.45	212.37
		9/10/09	25.96	209.95
		12/7/09	26.21	209.70
		3/22/10	17.60	218.22
		7/1/10	24.43	208.47
		5/4/12	27.18	208.73
		8/14/12	27.19	208.64
		11/6/12	25.56	210.27
		2/7/13	24.58	211.25
		5/7/13	26.04	209.79
		8/16/13	25.89	209.94
		11/11/13	NM	NM
		2/20/14	26.11	209.72
		5/15/14	22.52	213.31
		8/8/14	26.67	209.16
		11/24/14	28.72	207.11
		2/27/15	29.83	206.00
		5/13/15	24.75	211.08
		8/5/15	29.47	206.07
		11/5/15	31.36	204.47
		2/12/16	27.07	208.76
		5/10/16	24.68	211.15
		8/18/16	26.19	209.48
		11/16/16	29.33	206.50
		2/23/17	22.48	213.35
		5/10/17	22.65	213.18
		8/9/17	27.91	207.92
		11/8/17	30.53	205.30
		2/21/18	24.14	211.69

**TABLE 1**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Depth-to-Water Measurements Collected**

<b>Well ID</b>	<b>Top of Casing Elevation</b>	<b>Sample Date</b>	<b>DTW (ft btoc)</b>	<b>Water Level Elevation</b>
MW-4B (continued)	235.83	5/9/18	22.75	213.08
		8/9/18	25.02	210.81
		11/15/18	19.93	215.90
		2/27/19	22.52	213.31

DTW depth to water

ft btoc feet below top of PVC casing

NM not measured

H:\Town of Fishkill\2019\February\Table 1 DTW summary.doc

**TABLE 2**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Monitoring Wells**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-1A	6/26/09	62.3	84.1
	9/10/09	59.4	88.8
	12/7/09	78.4	118
	3/22/10	85.8	214
	7/1/10	80.1	157
	5/4/12	120	130
	8/14/12	105	115
	11/6/12	122	134
	2/7/13	103	104
	5/7/13	123	163
	8/16/13	101	132
	11/11/13	110	134
	2/20/14	127	<b>336</b>
	5/15/14	71.1	88.1
	8/8/14	108	139
	11/24/14	134	205
	2/27/15	145	249
	5/13/15	95.2	144
	8/5/15	111	176
	11/5/15	108	129
	2/12/16	204	<b>312</b>
	5/10/16	170	<b>329</b>
	8/18/16	128	156
	11/16/16	114	158
	2/23/17	80.1	188
	5/10/17	75.6	157
	8/9/17	125	178
	11/8/17	122	173
	2/21/18	229	<b>437</b>
	5/9/18	109	187
	8/9/18	58	238
	11/15/18	90.5	159
	2/27/19	132	229
MW-1B	6/26/09	58.0	98.4
	9/10/09	126	<b>278</b>
	12/7/09	129	<b>283</b>
	3/22/10	202	<b>428</b>
	7/1/10	158	245
	5/4/12	127	175
	8/14/12	99.5	128
	11/6/12	107	145
	2/7/13	103	133
	5/7/13	103	134
	8/16/13	107	160
	11/11/13	100	158
	2/20/14	105	169
	5/15/14	116	198
	8/8/14	110	181
	11/24/14	96.5	151
	2/27/15	101	165
	8/8/14	110	181
	11/24/14	96.5	151
	5/13/15	107	208

**TABLE 2**  
(continued)

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Water-Quality Results**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-1B (continued)	8/5/15	109	203
	11/5/15	110	207
	2/12/16	128	222
	5/10/16	113	193
	8/18/16	111	230
	11/16/16	108	236
	2/23/17	90.0	242
	5/10/17	120	225
	8/9/17	112	179
	11/8/17	118	196
	2/21/18	111	211
	5/9/18	138	216
	8/9/18	135	225
	11/15/18	129	247
	2/27/19	89.3	117
MW-2A	6/26/09	112	225
	9/10/09	104	221
	12/7/09	115	225
	3/22/10	102	180
	7/1/10	130	202
	5/4/12	99.2	114
	8/14/12	87.7	114
	11/6/12	92.2	106
	2/7/13	92.6	97.6
	5/7/13	96.9	101
	8/16/13	97.1	115
	11/11/13	98.1	113
	2/20/14	92.1	115
	5/15/14	90.4	122
	8/8/14	95.8	137
	11/24/14	95.5	130
	2/27/15	100	150
	5/13/15	92.3	152
	8/5/15	99.4	143
	11/5/15	103	131
	2/12/16	118	168
	5/10/16	106	163
	8/18/16	85.3	208
	11/16/16	88.5	168
	2/23/17	78.1	198
	5/10/17	94.5	206
	8/9/17	91.4	154
	11/8/17	106	169
	2/21/18	94.1	163
	5/9/18	106	168
	8/9/18	108	176
	11/15/18	113	201
	2/27/19	115	210
MW-2B	6/26/09	114	236
	9/10/09	112	242
	12/7/09	121	262

**TABLE 2**  
**(continued)**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Water-Quality Results**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-2B (continued)	3/22/10	136	<b>301</b>
	7/1/10	149	237
	5/4/12	112	138
	8/14/12	104	133
	11/6/12	107	129
	2/7/13	97.1	106
	5/7/13	93.6	113
	8/16/13	96.7	124
	11/11/13	99.4	125
	2/20/14	93.6	128
	5/15/14	97.2	153
	8/8/14	103	162
	11/24/14	102	158
	2/27/15	99.1	158
	5/13/15	98.4	186
	8/5/15	102	190
	11/5/15	104	182
	2/12/16	116	196
	5/10/16	110	222
	8/18/16	86.5	225
	11/16/16	102	224
	2/23/17	79.9	200
	5/10/17	98.3	222
	8/9/17	108	207
	11/8/17	113	208
	2/21/18	107	197
	5/9/18	107	173
	8/9/18	120	222
	11/15/18	129	224
	2/27/19	124	212
MW-3A	6/26/09	102	153
	9/10/09	97.9	<b>386</b>
	12/7/09	122	<b>313</b>
	3/22/10	102	244
	7/1/10	127	211
	5/4/12	85.0	49.1
	8/14/12	69.3	56.6
	11/6/12	67.3	70.4
	2/7/13	56.0	73.7
	5/7/13	56.7	82.0
	8/16/13	67.7	152
	11/11/13	76.6	121
	2/20/14	105	133
	5/15/14	69.8	150
	8/8/14	74.1	137
	11/24/14	71.4	70.9
	2/27/15	76.3	132
	5/13/15	76.5	210
	8/5/15	87.3	216
	11/5/15	NS	NS
	2/12/16	78.1	78.5
	5/10/16	74.7	160

**TABLE 2**  
**(continued)**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Water-Quality Results**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-3A (continued)	8/18/16	83.5	153
	11/16/16	68.9	107
	2/23/17	56.7	137
	5/10/17	77.2	158
	8/9/17	91.4	163
	11/8/17	95.7	116
	2/21/18	70.5	70.6
	5/9/18	137	<b>366</b>
	8/9/18	144	<b>308</b>
	11/15/18	143	247
MW-3B	2/27/19	103	119
	6/26/09	125	243
	9/10/09	174	<b>447</b>
	12/7/09	195	<b>465</b>
	3/22/10	172	<b>370</b>
	7/1/10	192	<b>277</b>
	5/4/12	137	153
	8/14/12	126	152
	11/6/12	119	144
	2/7/13	118	146
	5/7/13	110	144
	8/16/13	112	183
	11/11/13	81.0	125
	2/20/14	101	133
	5/15/14	95.8	171
	8/8/14	106	218
	11/24/14	113	193
	2/27/15	103	168
	5/13/15	95.0	179
	8/5/15	121	240
	11/5/15	168	<b>320</b>
	2/12/16	131	232
	5/10/16	87.2	152
	8/18/16	118	<b>262</b>
	11/16/16	122	<b>279</b>
	2/23/17	89.2	206
	5/10/17	97.7	208
	8/9/17	84.3	157
	11/8/17	141	<b>251</b>
	2/21/18	130	225
	5/9/18	139	<b>304</b>
	8/9/18	162	<b>351</b>
	11/15/18	141	248
	2/27/19	159	<b>270</b>
MW-4A	6/26/09	111	151
	9/10/09	118	<b>331</b>
	12/7/09	159	<b>417</b>
	3/22/10	122	202
	7/1/10	119	202
	5/4/12	109	111
	8/14/12	105	112
	11/6/12	110	109

**TABLE 2**  
**(continued)**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Water-Quality Results**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-4A (continued)	2/7/13	98.5	103
	5/7/13	96.9	103
	8/16/13	110	160
	11/11/13	118	180
	2/20/14	114	160
	5/15/14	80.0	143
	8/8/14	86.1	164
	11/24/14	101	206
	2/27/15	98.0	158
	5/13/15	90.7	221
	8/5/15	98.8	230
	11/5/15	NS	NS
	2/12/16	127	244
	5/10/16	98.4	189
	8/18/16	95.5	201
	11/16/16	93.8	246
	2/23/17	72.4	152
	5/10/17	75.8	164
	8/9/17	96.8	175
	11/8/17	106	169
	2/21/18	113	209
	5/9/18	111	211
	8/9/18	126	220
	11/15/18	125	124
	2/27/19	77.4	93.9
MW-4B	6/26/09	111	223
	9/10/09	151	341
	12/7/09	168	427
	3/22/10	151	277
	7/1/10	161	241
	5/4/12	107	130
	8/14/12	103	126
	11/6/12	105	111
	2/7/13	114	117
	5/7/13	122	119
	8/16/13	129	168
	11/11/13	126	172
	2/20/14	108	137
	5/15/14	101	164
	8/8/14	103	225
	11/24/14	102	150
	2/27/15	96.5	149
	5/13/15	111	234
	8/5/15	112	270
	11/5/15	108	192
	2/12/16	125	211
	5/10/16	112	188
	8/18/16	123	241
	11/16/16	99.1	254
	2/23/17	78.5	146
	5/10/17	87.6	177
	8/9/17	93.5	195

**TABLE 2**  
**(continued)**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Water-Quality Results**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-4B (continued)	11/8/17	114	197
	2/21/18	111	178
	5/9/18	116	236
	8/9/18	133	<b>277</b>
	11/15/18	167	<b>283</b>
	2/27/19	99.1	104
<b>NYSDOH Drinking Water Standard</b>		270*	250

Note: Bold denotes drinking water standard exceedance.

\* Recommended limit for sodium. NYSDOH does not currently have a drinking water standard.

mg/l milligrams per liter

NYSDOH New York State Department of Health

NS Not sampled

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-1	1/9/2009	125	233
	1/19/2009	130	250
	1/21/2009	121	236
	2/4/2009	128	236
	3/24/2009	143	<b>296</b>
	4/1/2009	135	<b>308</b>
	4/23/2009	139	<b>293</b>
	4/29/2009	158	<b>318</b>
	5/13/2009	163	<b>293</b>
	6/3/2009	162	<b>327</b>
	6/26/2009	167	<b>390</b>
	6/30/2009	164	<b>316</b>
	7/24/2009	161	<b>294</b>
	7/30/2009	160	<b>312</b>
	8/12/2009	165	<b>330</b>
	9/2/2009	145	<b>303</b>
	9/10/2009	141	<b>295</b>
	9/16/2009	149	<b>257</b>
	9/30/2009	152	<b>266</b>
	10/14/2009	310	<b>292</b>
	10/28/2009	152	<b>323</b>
	11/11/2009	138	<b>267</b>
	11/24/2009	147	250
	12/7/2009	145	<b>292</b>
	12/29/2009	154	<b>265</b>
	1/6/2010	151	<b>269</b>
	1/20/2010	157	<b>255</b>
	2/3/2010	102	<b>257</b>
	2/17/2010	148	<b>264</b>
	3/3/2010	144	<b>262</b>
	3/17/2010	157	<b>288</b>
	3/22/2010	162	<b>318</b>
	4/7/2010	151	<b>285</b>
	4/21/2010	144	<b>301</b>
	5/19/2010	150	<b>346</b>
	6/8/2010	150	<b>343</b>
	6/23/2010	148	<b>346</b>
	7/1/2010	154	<b>246</b>
	7/7/2010	145	<b>352</b>
	7/28/2010	142	<b>345</b>
	8/11/2010	127	<b>342</b>
	8/17/2010	76.1	163
	9/1/2010	143	<b>312</b>

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-1 (continued)	9/15/2010	143	<b>328</b>
	9/28/2010	153	<b>330</b>
	10/13/2010	148	<b>318</b>
	10/27/2010	143	<b>290</b>
	11/10/2010	136	<b>274</b>
	11/23/2010	133	237
	12/8/2010	140	234
	12/20/2010	143	248
	1/5/2011	133	236
	1/19/2011	140	<b>258</b>
	2/9/2011	146	<b>255</b>
	3/2/2011	145	<b>269</b>
	3/16/2011	139	231
	3/30/2011	141	232
	4/13/2011	131	207
	4/29/2011	137	262
	5/13/2011	135	<b>266</b>
	5/25/2011	126	<b>263</b>
	6/21/2011	136	<b>254</b>
	7/6/2011	137	246
	7/27/2011	135	245
	8/10/2011	125	240
	8/31/2011	131	197
	9/28/2011	108	147
	10/11/2011	114	168
	10/26/2011	114	172
	11/9/2011	105	164
	11/30/2011	116	164
	12/7/2011	123	174
	12/19/2011	121	168
	1/11/2012	125	166
	2/8/2012	116	160
	2/22/2012	112	150
	3/7/2012	117	140
	3/21/2012	119	142
	4/11/2012	112	120
	4/25/2012	101	113
	5/4/2012	106	99.0
	5/9/2012	104	110
	5/23/2012	108	109
	6/6/2012	102	109
	6/20/2012	101	119
	7/11/2012	110	104

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-1 (continued)	7/25/2012	105	113
	8/8/2012	60.0	102
	8/14/2012	95.7	97.5
	8/22/2012	103	106
	9/5/2012	97.9	107
	9/19/2012	98.6	106
	10/10/2012	98.4	105
	10/24/2012	103	106
	11/6/2012	43.6	70.1
	11/6/2012	93.8	93.0
	12/5/2012	92.4	94.0
	12/19/2012	104	94.0
	1/9/2013	102	95.7
	1/23/2013	102	96.0
	2/7/2013	95.6	95.7
	2/20/2013	111	104
	3/6/2013	117	106
	3/20/2013	116	119
	4/3/2013	112	112
	4/18/2013	104	119
	5/7/2013	91.1	99.7
	5/15/2013	98.4	113
	5/29/2013	103	113
	6/12/2013	97.1	113
	6/26/2013	105	109
	7/3/2013	104	117
	7/17/2013	99.9	108
	8/6/2013	95.7	112
	8/16/2013	89.4	106
	9/4/2013	90.6	112
	9/16/2013	97.3	113
	10/2/2013	91.9	115
	10/16/2013	97	116
	10/30/2013	107	118
	11/13/2013	97.3	122
	12/18/2013	98.4	129
	1/8/2014	94.1	128
	1/22/2014	105	122
	2/12/2014	92.0	107
	2/20/2014	86.9	112
	2/26/2014	95.6	112
	3/11/2014	99.2	117
	3/25/2014	100	132

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-1 (continued)	4/9/2014	107	155
	4/23/2014	103	154
	5/7/2014	101	171
	5/15/2014	90.8	165
	5/21/2014	96.4	190
	6/3/2014	96.0	181
	6/18/2014	101	184
	7/2/2014	97.0	179
	7/16/2014	95.5	169
	8/8/2014	88.0	163
	8/27/2014	91.6	166
	9/10/2014	100	167
	9/23/2014	100	164
	10/8/2014	100	163
	10/22/2014	110	166
	11/5/2014	100	164
	11/19/2014	90.5	151
	11/24/2014	89.4	145
	12/3/2014	66.0	158
	12/22/2014	87.0	147
	1/14/2015	110	136
	1/28/2015	95.0	135
	2/11/2015	100	141
	2/27/2015	85.2	132
	3/11/2015	102	147
	3/25/2015	110	165
	4/8/2015	110	176
	4/22/2015	96.0	180
	5/13/2015 (LBG sample)	86.0	161
	5/13/2015 (CAMO sample)	110	170
	5/27/2015	140	188
	6/10/2015	97	167
	6/24/2015	100	166
	7/15/2015	122	174
	7/29/2015	117	170
	8/5/2015	95.3	182
	8/12/2015	97.9	197
	8/19/2015	109	194
	9/16/2015	117	198
	9/23/2015	136	215
	10/6/2015	94	191
	10/20/2015	111	201
	11/4/2015	105	194

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
T-1 (continued)	11/5/2015	99.5	189
	11/18/2015	131	204
	12/1/2015	95.1	195
	1/6/2016	105	210
	1/20/2016	130	200
	2/3/2016	63.8	184
	2/12/16	107	185
	2/17/2016	83.7	198
	3/2/2016	171	193
	3/16/2016	106	193
	4/13/2016	101	194
	4/26/2016	96.8	182
	5/10/2016 (CAMO sample)	120	210
	5/10/2016 (LBG sample)	99.3	177
	5/25/2016	139	194
	6/8/2016	127	216
	6/29/2016	124	218
	7/6/2016	152	221
	7/20/2016	132	234
	8/3/2016	136	220
	8/17/2016	102	218
	8/18/16	85.7	211
	9/7/2016	74.6	239
	9/21/2016	113	217
	10/13/2016	94.6	198
	10/26/2016	115	198
	11/2/2016	92.0	218
	11/16/2016 (CAMO sample)	98.3	222
	11/16/2016 (LBG sample)	93.7	210
	12/7/2016	112	222
	12/20/2016	122	188
	1/4/2017	99.7	163
	1/18/2017	107	117
	2/1/2017	104	173
	2/14/2017	126	196
	2/23/2017	66.3	171
	3/8/2017	125	165
	3/21/2017	110	197
	3/29/2017	103	158
	4/5/2017	104	185
	4/19/2017	105	188
	5/10/2017 (CAMO sample)	85.5	210
	5/10/2017 (LBG sample)	93.7	186

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
T-1 (continued)	5/24/2017	104	203
	6/6/2017	98.3	194
	6/21/2017	92.2	196
	7/5/2017	103	201
	7/26/2017	102	194
	8/2/2017	105	195
	8/9/2017	103	189
	8/16/2017	93.6	190
	9/6/2017	103	190
	9/19/2017	95.4	179
	10/4/2017	104	178
	10/17/2017	93.3	177
	11/7/2017	105	173
	11/8/2017	103	185
	11/28/2017	98.3	183
	12/5/2017	97.6	188
	12/18/2017	95.9	179
	1/3/2018	101	187
	1/23/2018	105	178
	2/5/2018	110	174
	2/21/2018 (CAMO sample)	102	164
	2/21/2018 (LBGHES sample)	99.3	163
	3/6/2018	106	140
	3/27/2018	108	179
	4/3/2018	115	186
	4/16/2018	111	205
	5/8/2018	117	246
	5/9/2018	120	246
	5/23/2018	129	<b>289</b>
	6/5/2018	125	<b>322</b>
	6/18/2018	130	<b>222</b>
	7/3/2018	144	<b>305</b>
	7/17/2018	142	<b>294</b>
	8/1/2018	144	<b>293</b>
	8/9/2018	137	<b>308</b>
	8/14/2018	164	<b>304</b>
	8/28/2018	135	<b>308</b>
	9/12/2018	143	<b>300</b>
	9/25/2018	140	<b>288</b>
	10/9/2018	161	<b>284</b>
	10/24/2018	183	<b>270</b>
	11/6/2018	171	<b>255</b>
	11/15/2018	146	233

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-1 (continued)	11/20/2018	126	182
	12/4/2018	132	178
	12/18/2018	114	167
	1/9/2019	126	177
	1/22/2019	121	181
	2/5/2019	130	184
	2/19/2019	129	177
	2/27/2019	128	169
T-2	12/14/2006	110	190
	8/17/2010	61.6	162
	11/6/2012	100	116
	12/18/2013	118	138
	1/8/2014	108	151
	1/22/2014	117	152
	2/12/2014	109	154
	2/26/2014	115	160
	3/11/2014	119	160
	3/25/2014	118	164
	4/9/2014	116	153
	4/23/2014	113	147
	5/7/2014	114	146
	5/15/2014	98.9	133
	5/21/2014	106	149
	6/3/2014	116	157
	6/18/2014	119	164
	7/2/2014	116	172
	7/16/2014	118	166
	8/8/2014	104	162
	8/27/2014	113	169
	9/10/2014	120	171
	9/23/2014	120	169
	10/8/2014	120	168
	10/22/2014	130	169
	11/5/2014	120	163
	11/19/2014	72.6	156
	11/24/2014	103	153
	12/3/2014	104	169
	12/22/2014	69.6	178
	1/14/2015	120	196
	1/28/2015	120	198
	2/11/2015	130	204
	2/27/2015	106	192
	3/11/2015	123	207

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-2 (continued)	3/25/2015	120	200
	4/8/2015	120	186
	4/22/2015	105	175
	5/13/2015 (LBG sample)	98.4	174
	5/13/2015 (CAMO sample)	120	183
	5/27/2015	120	187
	6/10/2015	110	185
	6/24/2015	120	181
	7/15/2015	103	167
	7/29/2015	140	178
	8/5/2015	107	183
	8/12/2015	123	198
	8/19/2015	113	181
	9/16/2015	124	180
	9/23/2015	144	208
	10/6/2015	131	187
	10/20/2015	133	189
	11/4/2015	101	194
	11/5/2015	107	187
	11/18/2015	150	194
	12/1/2015	128	191
	1/6/2016	124	210
	1/20/2016	121	216
	2/3/2016	119	216
	2/12/2016	110	222
	2/17/2016	121	241
	3/2/2016	194	249
	3/16/2016	145	228
	4/13/2016	138	235
	4/26/2016	101	227
	5/10/2016 (CAMO sample)	114	242
	5/10/2016 (LBG sample)	115	231
	5/25/2016	122	216
	6/8/2016	128	240
	6/29/2016	135	231
	7/6/2016	165	214
	7/20/2016	119	242
	8/3/2016	102	228
	8/17/2016	137	223
	8/18/2016	87.7	201
	9/7/2016	88.2	237
	9/21/2016	80.1	224
	10/13/2016	108	214

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-2 (continued)	10/26/2016	126	215
	11/2/2016	119	243
	11/16/2016 (CAMO sample)	102	247
	11/16/2016 (LBG sample)	103	223
	12/7/2016	115	237
	12/20/2016	141	216
	1/4/2017	145	198
	1/18/2017	126	166
	2/1/2017	115	201
	2/14/2017	131	237
	2/23/2017	83.7	205
	3/8/2017	129	159
	3/21/2017	109	<b>321</b>
	3/29/2017	110	185
	4/5/2017	104	186
	4/19/2017	109	199
	5/10/2017 (CAMO sample)	87.4	187
	5/10/2017 (LBG sample)	93.4	177
	5/24/2017	102	173
	6/6/2017	93.4	165
	6/21/2017	86	165
	7/5/2017	98.2	162
	7/26/2017	95.4	172
	8/2/2017	97.4	164
	8/9/2017	91.7	168
	8/16/2017	90.9	170
	9/6/2017	103	167
	9/19/2017	99.5	179
	10/4/2017	101	171
	10/17/2017	94.1	162
	11/7/2017	103	165
	11/8/2017	102	171
	11/28/2017	97.8	169
	12/5/2017	93.5	179
	12/18/2017	91.3	164
	1/3/2018	98.4	164
	1/23/2018	96.1	169
	2/5/2018	107	163
	2/21/2018 (CAMO sample)	98.4	168
	2/21/2018 (LBGHES sample)	99.4	167
	3/6/2018	107	145
	3/27/2018	101	170
	4/3/2018	109	171

**TABLE 3**

**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2**

<b>Well ID</b>	<b>Sample Date</b>	<b>Sodium (mg/l)</b>	<b>Chloride (mg/l)</b>
T-2 (continued)	4/16/2018	107	181
	5/8/2018	106	196
	5/9/2018	109	194
	5/23/2018	110	220
	6/5/2018	107	212
	6/18/2018	111	176
	7/3/2018	126	224
	7/17/2018	125	225
	8/1/2018	126	225
	8/9/2018	112	220
	8/14/2018	136	231
	8/28/2018	115	238
	9/12/2018	123	231
	9/25/2018	121	233
	10/9/2018	139	233
	10/24/2018	158	230
	11/6/2018	145	224
	11/15/2018	124	206
	11/20/2018	113	182
	12/4/2018	129	219
	12/18/2018	120	223
	1/9/2019	127	200
	1/22/2019	114	177
	2/5/2019	118	158
	2/19/2019	108	139
	2/27/2019	104	144
<b>NYSDOH Drinking Water Standard</b>		270*	250

Note: Bold denotes drinking water standard exceedance.

\* Recommended limit for sodium. NYSDOH does not currently have a drinking water standard.

mg/l milligrams per liter

NYSDOH New York State Department of Health

TABLE 4

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Volatile Organic Compound Water-Quality Results from MW-1A and MW-1B**

Well ID	Sample Date	Bromo-Dichloro-methane (ug/l)	Bromoform (ug/l)	Chloroform (ug/l)	Dibromo-chloromethane (ug/l)	Acetone (ug/l)	Toluene (ug/l)	Methylene Chloride (ug/l)	Naphthalene (ug/l)	1,2,3-Trichloro-benzene (ug/l)
MW-1A	6/26/09	ND<0.5	ND<0.5	0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/10/09	ND<0.5	ND<0.5	0.9	ND<0.5	2.2 <sup>1</sup>	ND<0.5	ND<2.0	ND<0.5	ND<0.5
	12/7/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/22/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	MD<0.5	ND<0.5
	7/1/10	ND<0.5	ND<0.5	0.4J	ND<0.5	NR	ND<0.5	0.9B	ND<0.5	ND<0.5
	5/4/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.9JB	0.4JB	0.2J
	8/14/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	0.3JB	ND<2.0
	11/6/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	0.1	ND<2.0	ND<2.0	ND<2.0
	5/30/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	8/16/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	11/11/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/20/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	5/15/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	8/8/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.4B	ND<2.0	ND<0.5
	11/24/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/27/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/13/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	0.4B	ND<0.5
	8/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/12/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/18/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/16/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/23/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/17	ND<0.5	ND<0.5	0.2	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/8/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/21/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	5/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/15/18	ND<0.5	ND<0.5	0.2	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/27/19	ND<0.5	ND<0.5	0.9	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
MW-1B	6/26/09	ND<0.5	0.6	ND<0.5	0.6	NR	0.7	ND<0.5	ND<0.5	ND<0.5
	9/10/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5
	12/7/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/22/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5

TABLE 4

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

**Summary of Volatile Organic Compound Water-Quality Results from MW-1A and MW-1B**

<b>Well ID</b>	<b>Sample Date</b>	<b>Bromo-Dichloro-methane (ug/l)</b>	<b>Bromoform (ug/l)</b>	<b>Chloroform (ug/l)</b>	<b>Dibromo-chloromethane (ug/l)</b>	<b>Acetone (ug/l)</b>	<b>Toluene (ug/l)</b>	<b>Methylene Chloride (ug/l)</b>	<b>Naphthalene (ug/l)</b>	<b>1,2,3-Trichloro-benzene (ug/l)</b>
MW-1B (continued)	7/1/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.8B	ND<0.5	ND<0.5
	5/4/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.9JB	0.2JB	ND<2.0
	8/14/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.6J	0.2JB	ND<2.0
	11/6/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/30/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	0.1B	ND<2.0
	8/16/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	0.2B	ND<2.0
	11/11/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/20/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	5/15/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	8/8/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.3B	ND<2.0	ND<0.5
	11/24/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/27/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/13/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/12/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/18/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/16/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/23/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/9/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/8/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/21/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/15/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/27/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
<b>NYSDOH Drinking Water Standard</b>		5	5	5	5	5	5	5	5	5

ug/l

micrograms per liter

1/

Compound detected in method blank.

NR

not reported

J

Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL); therefore, the result is an estimated concentration.

B

Analyte is found in the associated batch blank.

NYSDOH

New York State Department of Health

**TABLE 5**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Monthly Precipitation Observed at  
Poughkeepsie AP Weather Station**

<b>Year</b>	<b>Month</b>	<b>Precipitation in Inches</b>	<b>30-Year Mean Precipitation in Inches (1981-2010)</b>
2009	January	2.09	3.08
	February	0.81	2.66
	March	1.86	3.57
	April	1.92	3.78
	May	6.33	4.41
	June	9.26	4.43
	July	6.39	4.65
	August	4.95	4.20
	September	1.70	4.28
	October	4.04	4.47
	November	1.46	3.47
	December	3.75	3.53
<b>2009 Annual Precipitation</b>		<b>44.61</b>	<b>46.53</b>
2010	January	2.04	3.08
	February	3.77	2.66
	March	4.55	3.57
	April	1.74	3.78
	May	1.77	4.41
	June	1.91	4.43
	July	1.40	4.65
	August	7.02	4.20
	September	3.64	4.28
	October	3.07	4.47
	November	2.41	3.47
	December	2.53	3.53
<b>2010 Annual Precipitation</b>		<b>35.87</b>	<b>46.53</b>
2011	January	1.78	3.08
	February	3.65	2.66
	March	5.17	3.57
	April	4.64	3.78
	May	5.16	4.41
	June	4.62	4.43
	July	2.25	4.65
	August	13.22	4.20
	September	10.10	4.28
	October	4.10	4.47
	November	2.94	3.47
	December	4.39	3.53
<b>2011 Annual Precipitation</b>		<b>62.04</b>	<b>46.53</b>
2012	January	2.15	3.08
	February	1.47	2.66

**TABLE 5**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Monthly Precipitation Observed at  
Poughkeepsie AP Weather Station**

<b>Year</b>	<b>Month</b>	<b>Precipitation in Inches</b>	<b>30-Year Mean Precipitation in Inches (1981-2010)</b>
2012 (continued)	March	1.19	3.57
	April	2.06	3.78
	May	4.61	4.41
	June	3.07	4.43
	July	4.08	4.65
	August	3.59	4.20
	September	5.60	4.28
	October	3.79	4.47
	November	0.69	3.47
	December	4.22	3.53
<b>2012 Annual Precipitation</b>		<b>36.52</b>	<b>46.53</b>
2013	January	2.05	3.08
	February	1.61	2.66
	March	1.48	3.57
	April	1.32	3.78
	May	4.19	4.41
	June	9.82	4.43
	July	3.14	4.65
	August	6.61	4.20
	September	2.32	4.28
	October	1.61	4.47
	November	2.43	3.47
	December	3.33	3.53
<b>2013 Annual Precipitation</b>		<b>39.91</b>	<b>46.53</b>
2014	January	1.50	3.08
	February	2.78	2.66
	March	2.75	3.57
	April	4.43	3.78
	May	2.57	4.41
	June	2.29	4.43
	July	4.97	4.65
	August	3.38	4.20
	September	0.52	4.28
	October	3.76	4.47
	November	2.19	3.47
	December	3.00	3.53
<b>2014 Annual Precipitation</b>		<b>34.14</b>	<b>46.53</b>
2015	January	2.94	3.08
	February	1.36	2.66
	March	2.17	3.57
	April	2.23	3.78

**TABLE 5**  
**SNOOK ROAD WELL FIELD**  
**(T) FISHKILL, NEW YORK**

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**Summary of Monthly Precipitation Observed at  
Poughkeepsie AP Weather Station**

<b>Year</b>	<b>Month</b>	<b>Precipitation in Inches</b>	<b>30-Year Mean Precipitation in Inches (1981-2010)</b>
2015 (continued)	May	1.97	4.41
	June	4.13	4.43
	July	1.95	4.65
	August	2.21	4.20
	September	3.46	4.28
	October	1.68	4.47
	November	1.82	3.47
	December	3.90	3.53
<b>2015 Annual Precipitation</b>		<b>29.82</b>	<b>46.53</b>
2016	January	1.21	3.08
	February	4.48	2.66
	March	1.04	3.57
	April	2.24	3.78
	May	3.20	4.41
	June	2.03	3.73
	July	5.93	4.65
	August	2.20	4.20
	September	0.93	4.28
	October	2.54	4.47
	November	4.73	3.47
	December	2.61	3.53
<b>2016 Annual Precipitation</b>		<b>33.14</b>	<b>46.53</b>
2017	January	2.97	3.08
	February	1.34	2.66
	March	5.32	3.57
	April	2.39	3.78
	May	4.50	4.41
	June	3.38	3.73
	July	3.60	4.65
	August	5.06	4.20
	September	1.75	4.28
	October	3.87	4.47
	November	0.82	3.47
	December	1.56	3.53
<b>2017 Annual Precipitation</b>		<b>36.55</b>	<b>46.53</b>
2018	January	2.88	3.08
	February	4.48	2.66
	March	2.23	3.57
	April	3.57	3.78
	May	3.11	4.41
	June	4.14	3.73

**TABLE 5**

**SNOOK ROAD WELL FIELD  
(T) FISHKILL, NEW YORK**

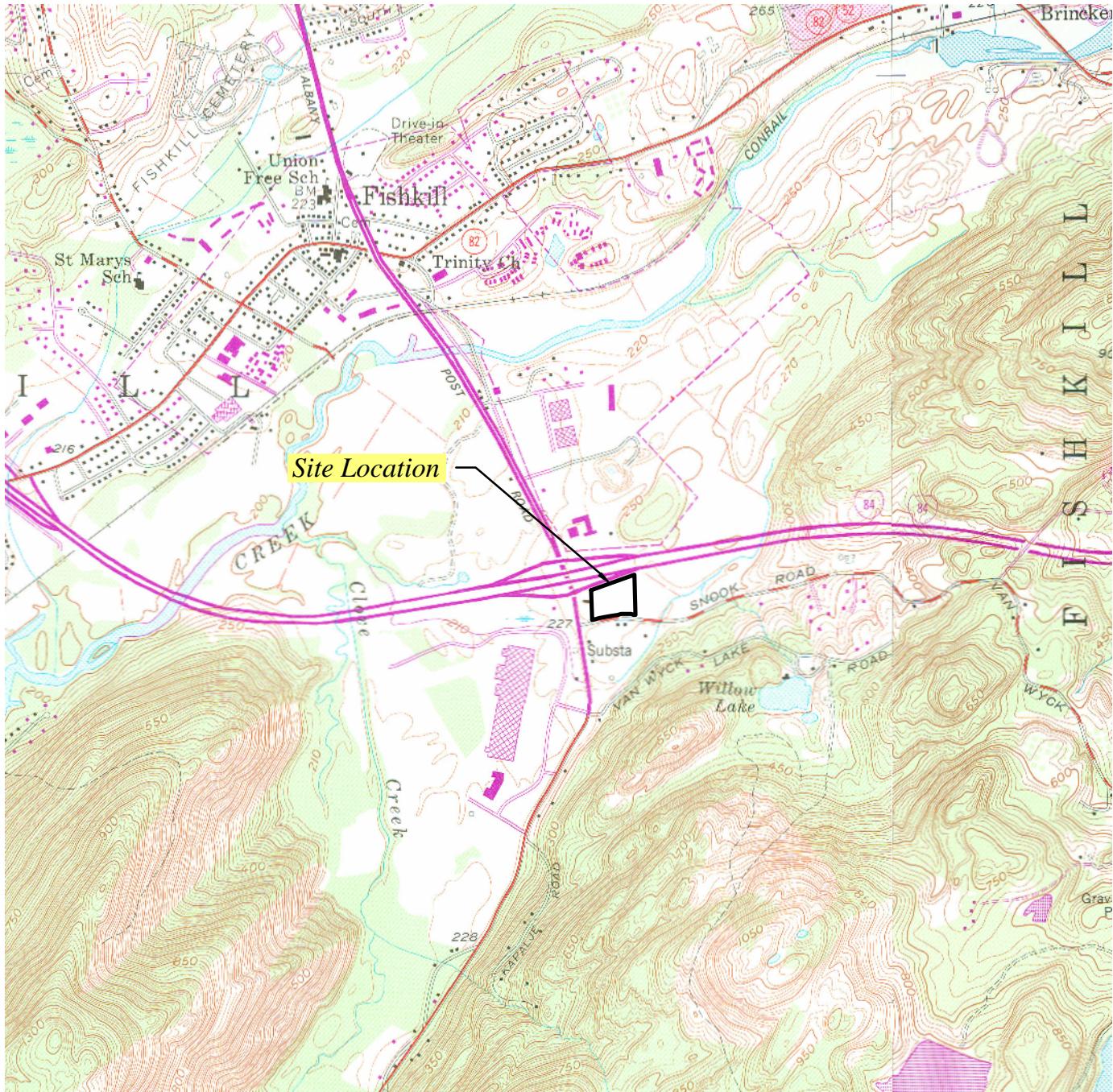
**Summary of Monthly Precipitation Observed at  
Poughkeepsie AP Weather Station**

<b>Year</b>	<b>Month</b>	<b>Precipitation in Inches</b>	<b>30-Year Mean Precipitation in Inches (1981-2010)</b>
2018 (continued)	July	6.82	4.65
	August	8.52	4.20
	September	5.02	4.28
	October	3.40	4.47
	November	7.55	3.47
	December	4.05	3.53
<b>2018 Annual Precipitation</b>		<b>55.77</b>	<b>46.53</b>
	January	3.58	3.08
	February	2.39	2.66

H:\Town of Fishkill\2019\February\Table 5 Precip.doc



## **FIGURES**



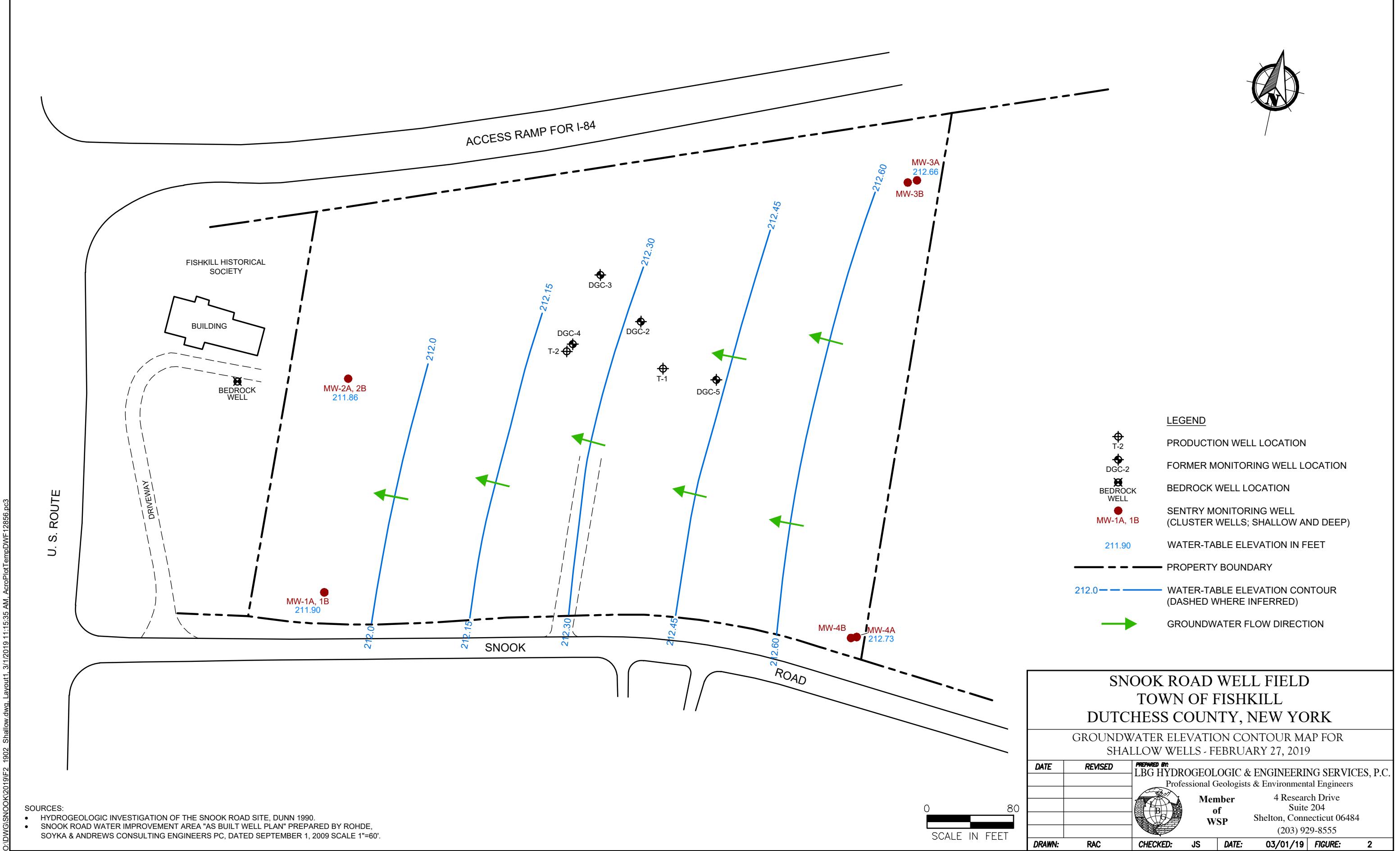
SOURCE: USGS TOPOGRAPHIC QUADRANGLES WAPPINGERS FALLS, NEW YORK (REVISED 1981)  
AND HOPEWELL JUNCTION, NEW YORK (REVISED 1981).

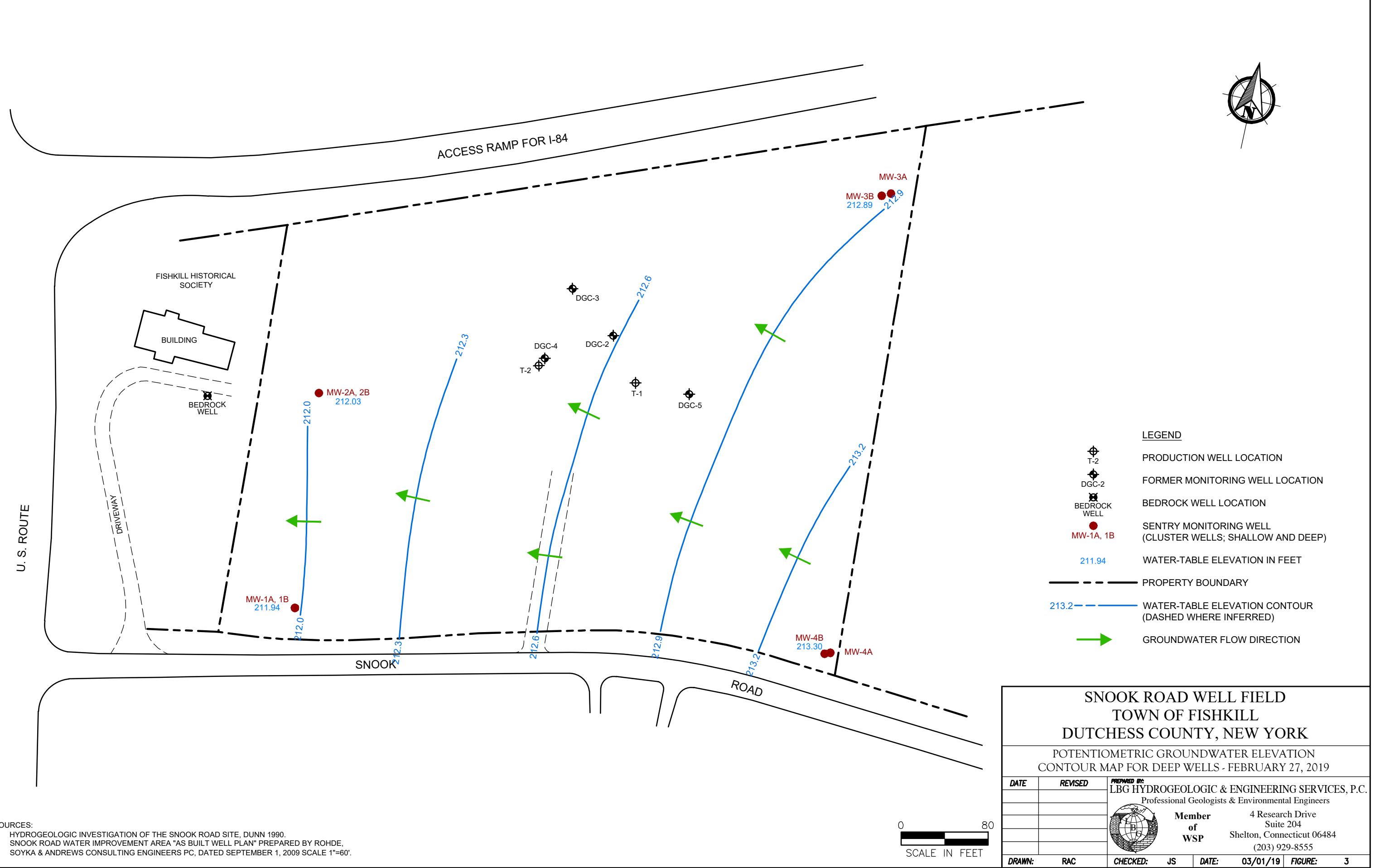


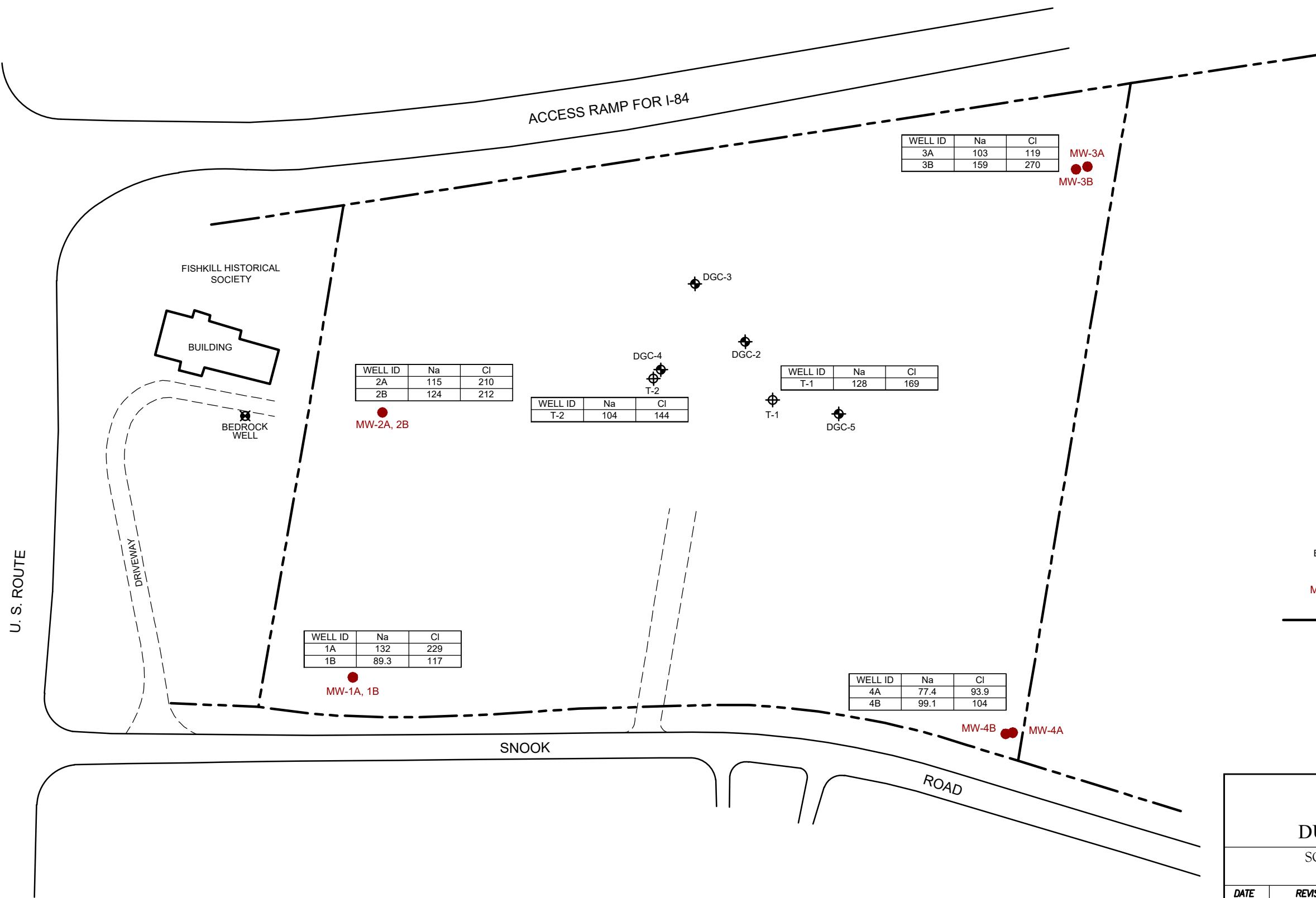
QUADRANGLE LOCATION

0 2000  
SCALE IN FEET

SNOOK ROAD WELL FIELD TOWN OF FISHKILL DUTCHESS COUNTY, NEW YORK			
SITE LOCATION MAP			
DATE	REVISED	PREPARED BY LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C. Professional Geologists & Environmental Engineers	
		 Member of WSP	
		4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555	
DRAWN:	RAC	CHECKED:	SS
DATE:	05/18/18	FIGURE:	1







#### LEGEND

- PRODUCTION WELL LOCATION
- FORMER MONITORING WELL LOCATION
- BEDROCK WELL LOCATION
- SENTRY MONITORING WELL (CLUSTER WELLS; SHALLOW AND DEEP)
- PROPERTY BOUNDARY
- Na SODIUM
- Cl CHLORIDE

NOTE:  
CONCENTRATIONS OF SODIUM AND CHLORIDE  
ARE REPORTED IN MILLIGRAMS PER LITER (mg/L).

SNOOK ROAD WELL FIELD TOWN OF FISHKILL DUTCHESS COUNTY, NEW YORK		
SODIUM AND CHLORIDE SAMPLE RESULTS FEBRUARY 27, 2019		
DATE	REVISED	PREPARED BY:
		LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C. Professional Geologists & Environmental Engineers
		
		Member of WSP 4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555
DRAWN:	RAC	CHECKED: SS DATE: 03/19/19 FIGURE: 4

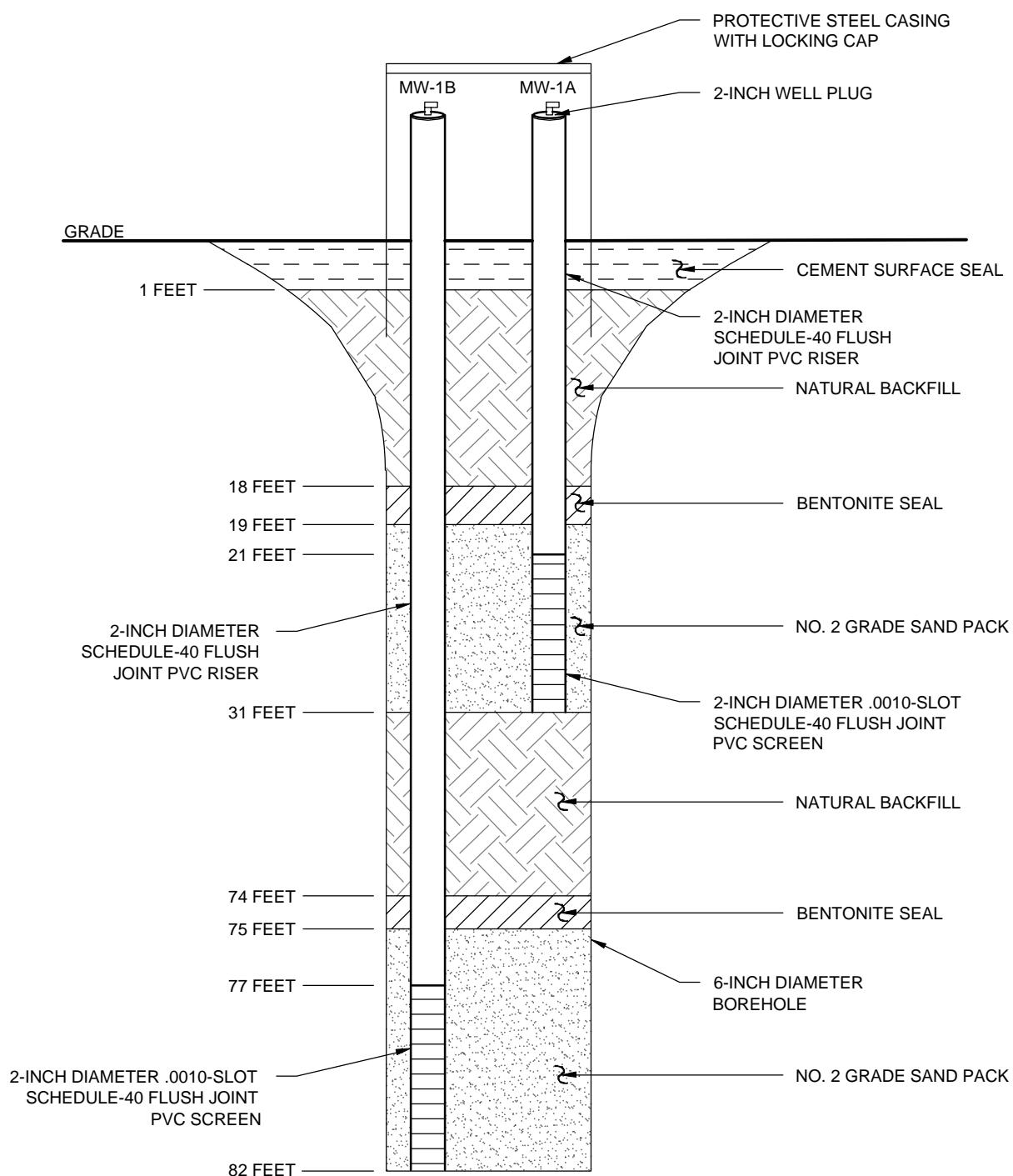
#### SOURCES:

- HYDROGEOLOGIC INVESTIGATION OF THE SNOOK ROAD SITE, DUNN 1990.
- SNOOK ROAD WATER IMPROVEMENT AREA "AS BUILT WELL PLAN" PREPARED BY ROHDE, SOYKA & ANDREWS CONSULTING ENGINEERS PC, DATED SEPTEMBER 1, 2009 SCALE 1"=60'.

0 80  
SCALE IN FEET



## **APPENDIX I**

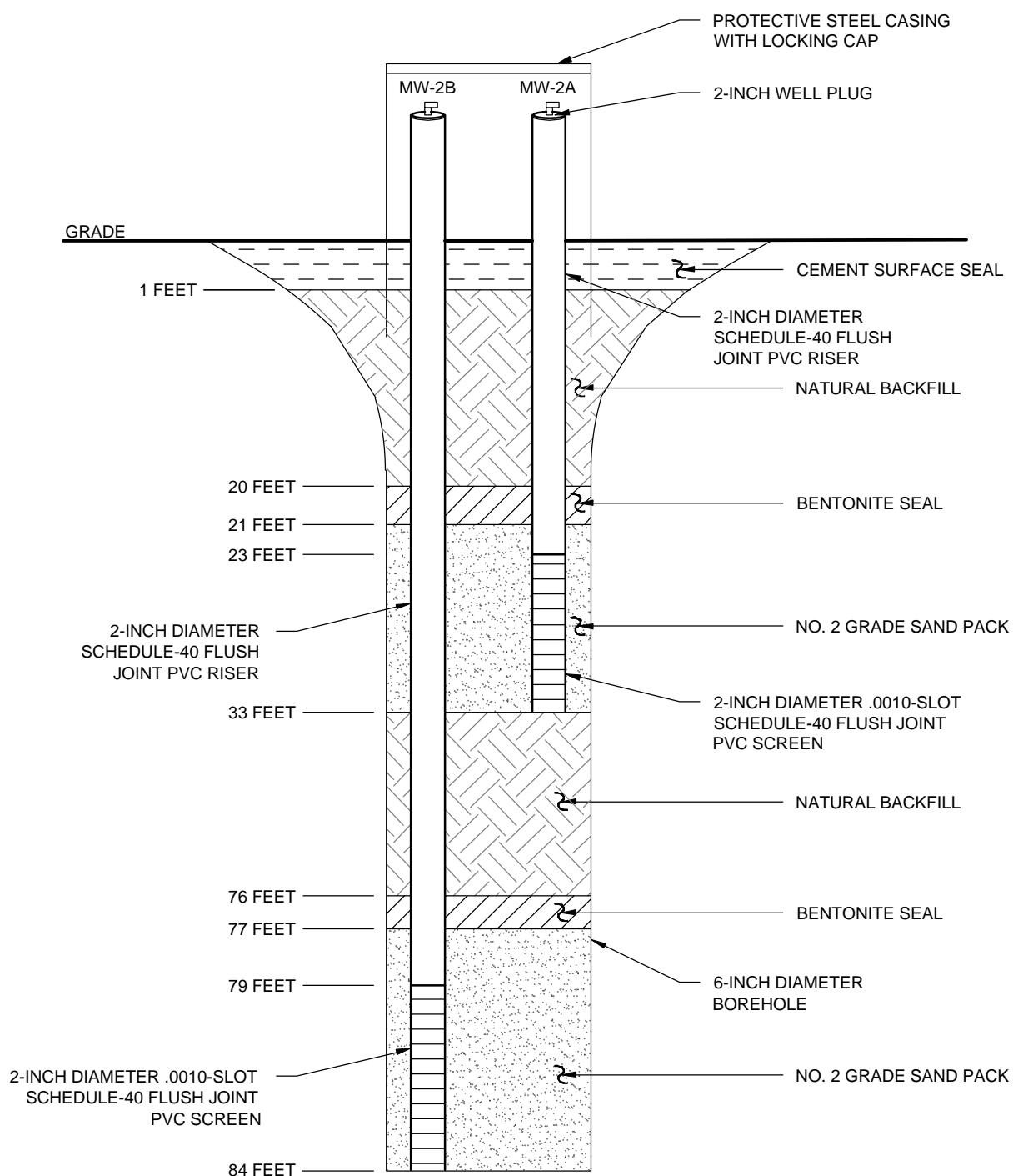


**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL  
DUTCHESS COUNTY, NEW YORK**

WELL CONSTRUCTION DIAGRAM OF MW-1A AND MW-1B

DATE	REVISED	PREPARED BY
		LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C.
		Professional Geologists & Environmental Engineers
		 Member of WSP
		4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555
DRAWN:	RAC	CHECKED: SS DATE: 05/18/18 FIGURE: -

NOT TO SCALE

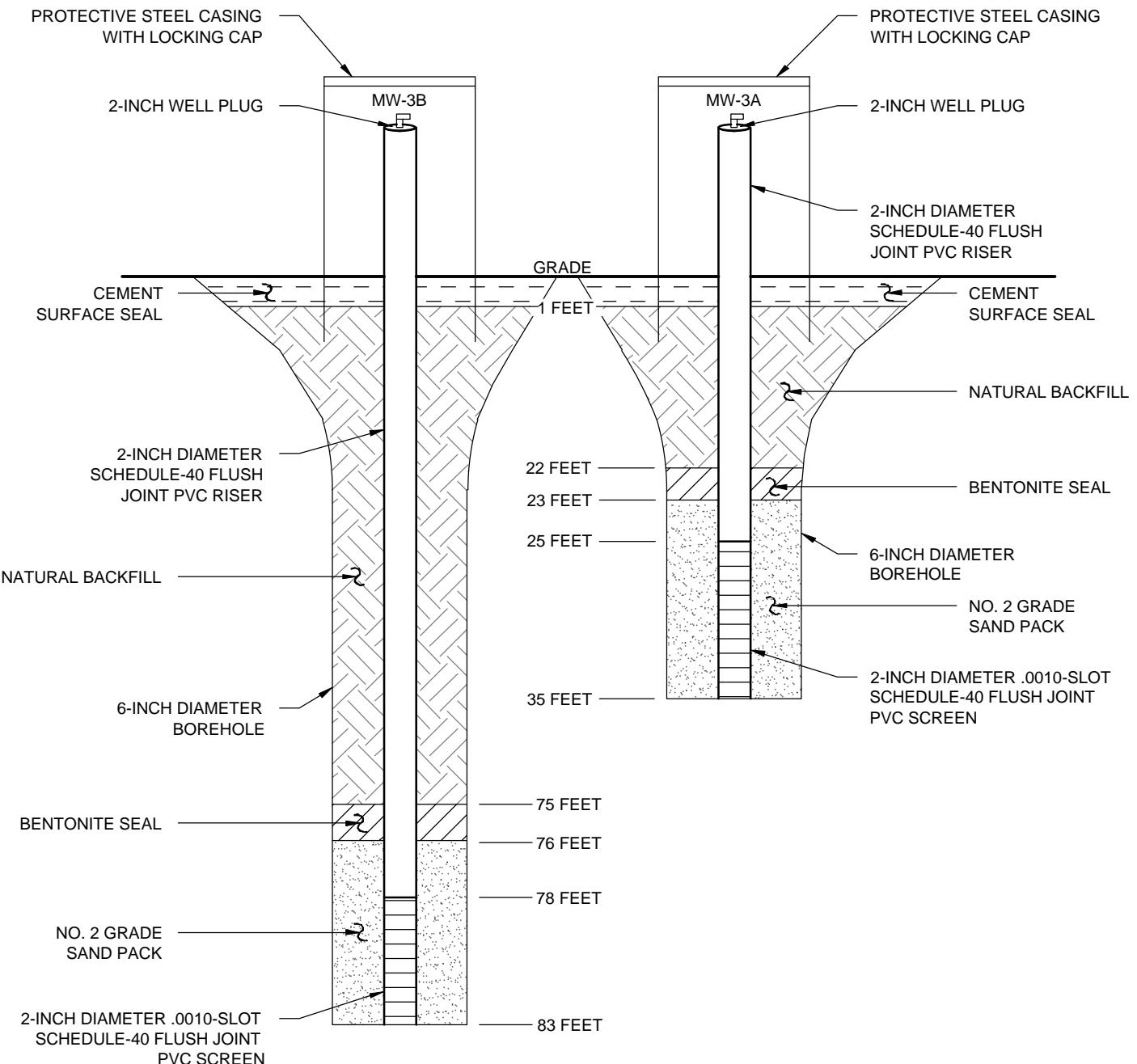


**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL  
DUTCHESS COUNTY, NEW YORK**

WELL CONSTRUCTION DIAGRAM OF MW-2A AND MW-2B

DATE	REVISED	PREPARED BY	
		LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C. Professional Geologists & Environmental Engineers	
		 <b>Member</b> of <b>WSP</b>	
		4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555	
DRAWN:	RAC	CHECKED:	SS
DATE:	05/18/18	FIGURE:	-

NOT TO SCALE

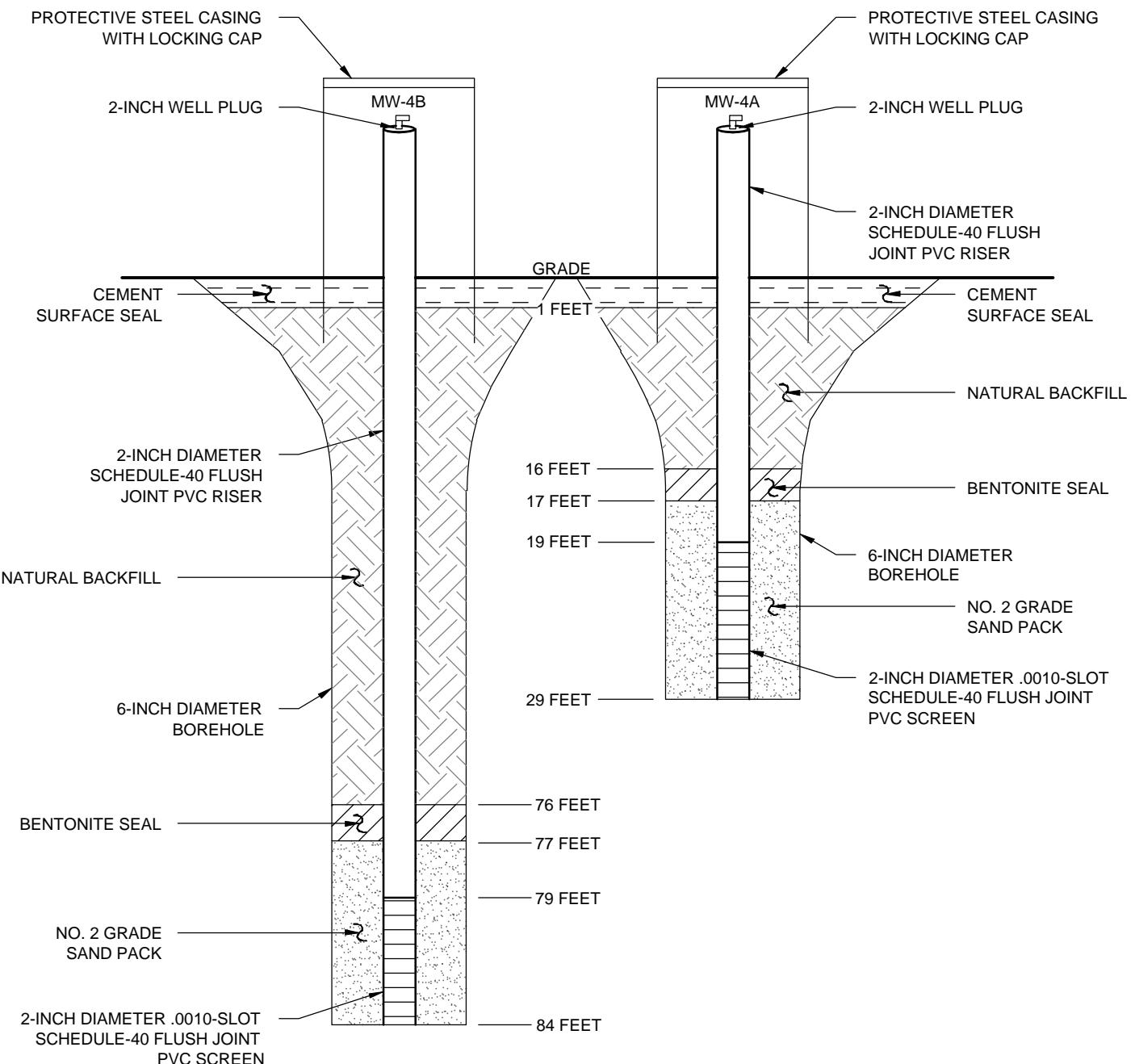


**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL  
DUTCHESS COUNTY, NEW YORK**

WELL CONSTRUCTION DIAGRAM OF MW-3A AND MW-3B

DATE	REVISED	PREPARED BY
		LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C.
		Professional Geologists & Environmental Engineers
		
		Member of WSP
		4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555
DRAWN:	RAC	CHECKED: SS DATE: 05/18/18 FIGURE: -

NOT TO SCALE



**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL  
DUTCHESS COUNTY, NEW YORK**

WELL CONSTRUCTION DIAGRAM OF MW-4A AND MW-4B

DATE	REVISED	PREPARED BY
		LBG HYDROGEOLOGIC & ENGINEERING SERVICES, P.C.
		Professional Geologists & Environmental Engineers
		
		Member of WSP
		4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555
DRAWN:	RAC	CHECKED: SS DATE: 05/18/18 FIGURE: -

NOT TO SCALE



## APPENDIX II



# Technical Report

prepared for:

**WSP USA, Inc. (Shelton)**  
4 Research Drive, Suite 204  
Shelton CT, 06484  
**Attention: Stacy Stieber**

Report Date: 03/06/2019  
**Client Project ID: Snook Rd**  
York Project (SDG) No.: 19B0984

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

Report Date: 03/06/2019  
Client Project ID: Snook Rd  
York Project (SDG) No.: 19B0984

**WSP USA, Inc. (Shelton)**  
4 Research Drive, Suite 204  
Shelton CT, 06484  
Attention: Stacy Stieber

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## Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on February 27, 2019 with a temperature of 2.3 C. The project was identified as your project: **Snook Rd.**

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<b>York Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
19B0984-01	MW-1A	Water	02/27/2019	02/27/2019
19B0984-02	MW-1B	Water	02/27/2019	02/27/2019
19B0984-03	MW-2A	Water	02/27/2019	02/27/2019
19B0984-04	MW-2B	Water	02/27/2019	02/27/2019
19B0984-05	MW-3A	Water	02/27/2019	02/27/2019
19B0984-06	MW-3B	Water	02/27/2019	02/27/2019
19B0984-07	MW-4A	Water	02/27/2019	02/27/2019
19B0984-08	MW-4B	Water	02/27/2019	02/27/2019
19B0984-09	T-1	Water	02/27/2019	02/27/2019
19B0984-10	T-2	Water	02/27/2019	02/27/2019

## **General Notes for York Project (SDG) No.: 19B0984**

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

**Approved By:**



**Date:** 03/06/2019

Benjamin Gulizia  
Laboratory Director





## Sample Information

Client Sample ID:	MW-1A	York Sample ID:	19B0984-01
York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time
19B0984	Snook Rd	Water	February 27, 2019 12:00 am
			Date Received 02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
108-86-1	Bromobenzene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
74-97-5	Bromochloromethane	ND		ug/L	0.2	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-27-4	Bromodichloromethane	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-25-2	Bromoform	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
74-83-9	Bromomethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
135-98-8	sec-Butylbenzene	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
104-51-8	n-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
98-06-6	tert-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
56-23-5	Carbon tetrachloride	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
108-90-7	Chlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-00-3	Chloroethane	ND		ug/L	0.3	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
67-66-3	<b>Chloroform</b>	<b>0.9</b>		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
74-87-3	Chloromethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
106-43-4	4-Chlorotoluene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
95-49-8	2-Chlorotoluene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
96-12-8	* 1,2-Dibromo-3-chloropropane	ND		ug/L	0.3	2.0	1	EPA 524.2 Certifications: CTDOH	03/05/2019 07:30	03/05/2019 13:41	RDS
124-48-1	Dibromochloromethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
106-93-4	* 1,2-Dibromoethane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH	03/05/2019 07:30	03/05/2019 13:41	RDS
74-95-3	Dibromomethane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS



## Sample Information

Client Sample ID: MW-1A

York Sample ID: 19B0984-01

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
594-20-7	2,2-Dichloropropane	ND		ug/L	0.2	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
142-28-9	1,3-Dichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
563-58-6	1,1-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
100-41-4	Ethyl Benzene	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
87-68-3	Hexachlorobutadiene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
98-82-8	Isopropylbenzene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.03	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-09-2	Methylene chloride	ND		ug/L	0.3	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
91-20-3	Naphthalene	ND		ug/L	0.1	2.0	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
103-65-1	n-Propylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS



## Sample Information

<u>Client Sample ID:</u> MW-1A		<u>York Sample ID:</u> 19B0984-01
<u>York Project (SDG) No.</u> 19B0984	<u>Client Project ID</u> Snook Rd	<u>Matrix</u> Water <u>Collection Date/Time</u> February 27, 2019 12:00 am <u>Date Received</u> 02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-42-5	Styrene	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
127-18-4	Tetrachloroethylene	ND		ug/L	0.4	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
108-88-3	Toluene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.2	2.0	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
79-01-6	Trichloroethylene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
96-18-4	1,2,3-Trichloroproppane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.03	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
75-01-4	Vinyl Chloride	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
95-47-6	* o-Xylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications:	03/05/2019 07:30	03/05/2019 13:41	RDS
179601-23-1	* p- & m- Xylenes	ND		ug/L	0.09	1.0	1	EPA 524.2 Certifications:	03/05/2019 07:30	03/05/2019 13:41	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
1330-20-7	Xylenes, Total	ND		ug/L	0.1	1.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 13:41	RDS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: SURR: 1,2-Dichloroethane-d4	104 %	69-130								
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	102 %	79-122								



## Sample Information

Client Sample ID: MW-1A

York Sample ID: 19B0984-01

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2037-26-5	Surrogate: SURR: Toluene-d8	100 %			81-117						

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	132		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:02	KML

### Chloride

Sample Prepared by Method: EPA 300

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	229		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 14:26	03/06/2019 01:01	MAC

## Sample Information

Client Sample ID: MW-1B

York Sample ID: 19B0984-02

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
108-86-1	Bromobenzene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
74-97-5	Bromochloromethane	ND		ug/L	0.2	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-27-4	Bromodichloromethane	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-25-2	Bromoform	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
74-83-9	Bromomethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS



## Sample Information

Client Sample ID: MW-1B

York Sample ID: 19B0984-02

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
135-98-8	sec-Butylbenzene	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
104-51-8	n-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
98-06-6	tert-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
56-23-5	Carbon tetrachloride	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
108-90-7	Chlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-00-3	Chloroethane	ND		ug/L	0.3	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
67-66-3	Chloroform	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
74-87-3	Chloromethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
106-43-4	4-Chlorotoluene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
95-49-8	2-Chlorotoluene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
96-12-8	* 1,2-Dibromo-3-chloropropane	ND		ug/L	0.3	2.0	1	EPA 524.2 Certifications: CTDOH	03/05/2019 07:30	03/05/2019 14:10	RDS
124-48-1	Dibromochloromethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
106-93-4	* 1,2-Dibromoethane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH	03/05/2019 07:30	03/05/2019 14:10	RDS
74-95-3	Dibromomethane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS



## Sample Information

**Client Sample ID:** MW-1B

**York Sample ID:** 19B0984-02

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
594-20-7	2,2-Dichloropropane	ND		ug/L	0.2	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
142-28-9	1,3-Dichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.06	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
563-58-6	1,1-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
100-41-4	Ethyl Benzene	ND		ug/L	0.04	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
87-68-3	Hexachlorobutadiene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
98-82-8	Isopropylbenzene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.03	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-09-2	Methylene chloride	ND		ug/L	0.3	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
91-20-3	Naphthalene	ND		ug/L	0.1	2.0	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
103-65-1	n-Propylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
100-42-5	Styrene	ND		ug/L	0.09	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
127-18-4	Tetrachloroethylene	ND		ug/L	0.4	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
108-88-3	Toluene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.2	2.0	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS



## Sample Information

**Client Sample ID:** MW-1B

**York Sample ID:** 19B0984-02

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Volatile Organics, 502.2 + MTBE List

Sample Prepared by Method: EPA 5030B

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
79-01-6	Trichloroethylene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.07	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
96-18-4	1,2,3-Trichloroproppane	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.03	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
75-01-4	Vinyl Chloride	ND		ug/L	0.08	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
95-47-6	* o-Xylene	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications:	03/05/2019 07:30	03/05/2019 14:10	RDS
179601-23-1	* p- & m- Xylenes	ND		ug/L	0.09	1.0	1	EPA 524.2 Certifications:	03/05/2019 07:30	03/05/2019 14:10	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.1	0.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS
1330-20-7	Xylenes, Total	ND		ug/L	0.1	1.5	1	EPA 524.2 Certifications: CTDOH,NELAC-NY10854,NJDEP	03/05/2019 07:30	03/05/2019 14:10	RDS

#### Surrogate Recoveries

#### Result

#### Acceptance Range

17060-07-0	Surrogate: SURR: 1,2-Dichloroethane-d4	96.9 %	69-130
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	93.0 %	79-122
2037-26-5	Surrogate: SURR: Toluene-d8	94.5 %	81-117

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	89.3		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:05	KML



## Sample Information

Client Sample ID: MW-1B

York Sample ID: 19B0984-02

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Chloride

Sample Prepared by Method: EPA 300

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	117		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 14:26	03/06/2019 01:25	MAC

## Sample Information

Client Sample ID: MW-2A

York Sample ID: 19B0984-03

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	115		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:07	KML

### Chloride

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	210		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 03:05	MAC

## Sample Information

Client Sample ID: MW-2B

York Sample ID: 19B0984-04

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	124		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:15	KML



## Sample Information

Client Sample ID: MW-2B

York Sample ID: 19B0984-04

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Chloride

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	212		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 04:19	MAC

## Sample Information

Client Sample ID: MW-3A

York Sample ID: 19B0984-05

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	103		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:17	KML

### Chloride

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	119		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 04:44	MAC

## Sample Information

Client Sample ID: MW-3B

York Sample ID: 19B0984-06

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	159		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:20	KML



## Sample Information

Client Sample ID: MW-3B

York Sample ID: 19B0984-06

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Chloride

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	270		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 05:09	MAC

### Log-in Notes:

### Sample Notes:

Client Sample ID: MW-4A

York Sample ID: 19B0984-07

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	77.4		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:22	KML

### Log-in Notes:

### Sample Notes:

### Chloride

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	93.9		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 05:33	MAC

## Sample Information

Client Sample ID: MW-4B

York Sample ID: 19B0984-08

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	99.1		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:25	KML

### Log-in Notes:

### Sample Notes:



## Sample Information

Client Sample ID: MW-4B

York Sample ID: 19B0984-08

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Chloride

Sample Prepared by Method: EPA 300

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	104		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 05:58	MAC

## Sample Information

Client Sample ID: T-1

York Sample ID: 19B0984-09

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

#### Log-in Notes:

#### Sample Notes:

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	128		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:27	KML

### Chloride

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	169		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 07:14	MAC

## Sample Information

Client Sample ID: T-2

York Sample ID: 19B0984-10

York Project (SDG) No.

19B0984

Client Project ID

Snook Rd

Matrix

Water

Collection Date/Time

February 27, 2019 12:00 am

Date Received

02/27/2019

### Sodium by EPA 6010

#### Log-in Notes:

#### Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	Sodium	104		mg/L	0.556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/01/2019 13:30	03/01/2019 17:30	KML



## Sample Information

<u>Client Sample ID:</u> T-2		<u>York Sample ID:</u> 19B0984-10
<u>York Project (SDG) No.</u> 19B0984	<u>Client Project ID</u> Snook Rd	<u>Matrix</u> Water <u>Collection Date/Time</u> February 27, 2019 12:00 am <u>Date Received</u> 02/27/2019

### Chloride

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	Chloride	144		mg/L	0.500	1	EPA 300.0 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/05/2019 12:02	03/06/2019 07:39	MAC

### Log-in Notes:

### Sample Notes:



### Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19B0984-01	MW-1A	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19B0984-02	MW-1B	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C



## Sample and Data Qualifiers Relating to This Work Order

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- CCV-E The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

### Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence . This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias ) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.



Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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**YORK**  
ANALYTICAL LABORATORIES INC.  
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Stratford, CT 06615  
Queens, NY 11418  
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www.yorklab.com

# Field Chain-of-Custody Record

YORK Project No.  
**19B0984**

Page \_\_\_\_ of \_\_\_\_

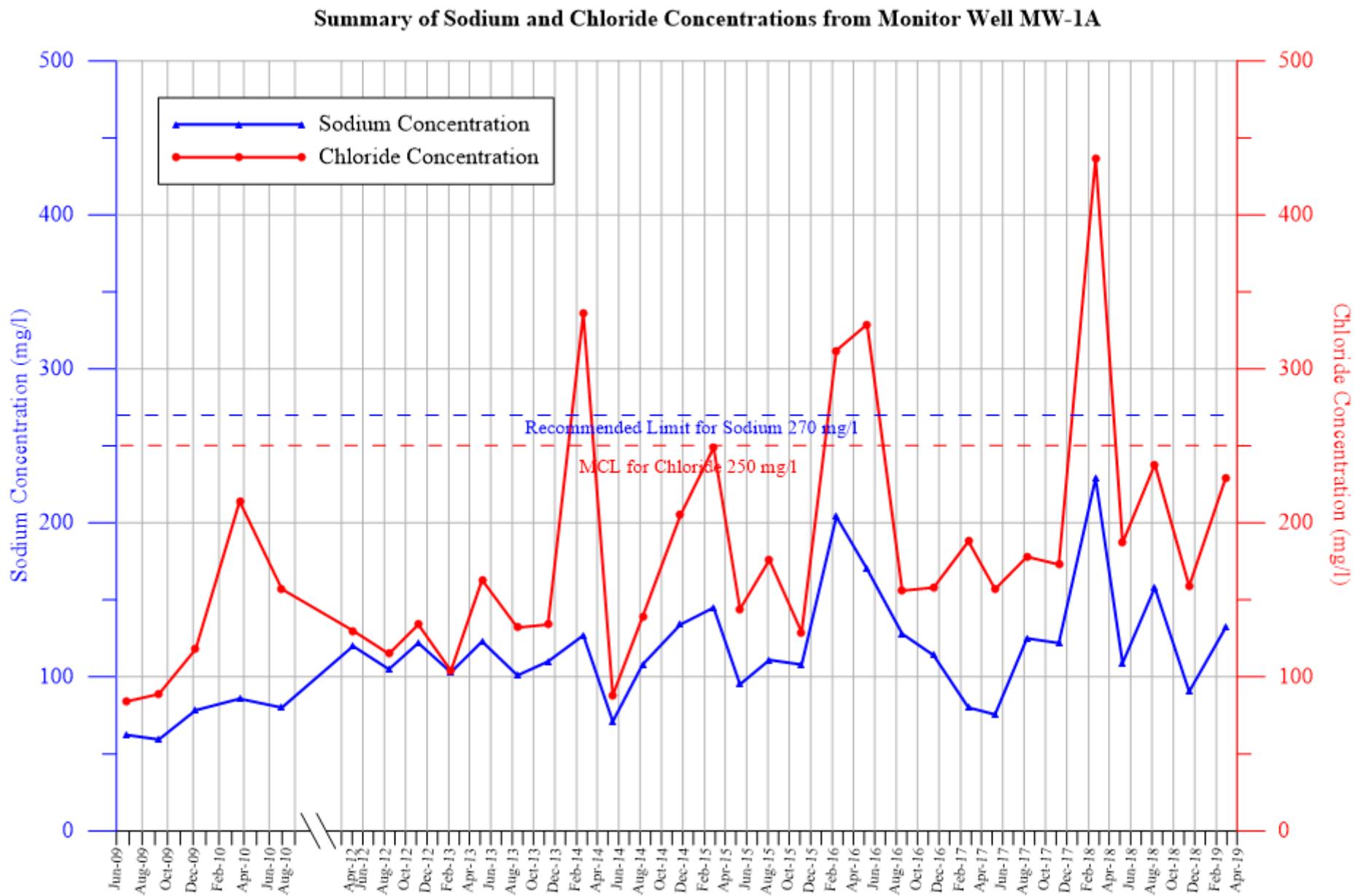
**NOTE:** YORK's Standard Terms & Conditions are listed on the back side of this document.  
This document serves your written authorization for YORK to proceed with the analyses requested below.  
Your signature binds you to YORK's Standard Terms & Conditions.

YOUR Information		Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: <b>WSP, USA</b>	Company: Address: 4 Research Dr., Suite #201 Brenton, CT 06615	Address: 307 Rte 62 Fishkill, NY 12524	Address: Town of Fishkill	YOUR Project Name <i>Snook Rd</i>	RUSH - Next Day RUSH - Two Day RUSH - Three Day RUSH - Four Day Standard (5-7 Day) <input checked="" type="checkbox"/>
Phone: <b>803-529-8555</b>	Contact: <b>Stacy Sticker</b>	Phone: <b>Robert Lincoln</b>	Contact: <b>Robert Lincoln</b>	E-mail: <b>stacy_sticker@wsp.com</b>	YOUR PC#: <i>YOUR PC#:</i>
Matrix Codes		Samples From	Report / EDD Type (circle selections)	YORK Reg. Comp.	
S - soil / solid GW - groundwater DW - drinking water WW - wastewater O - Oil Other		New York New Jersey Connecticut Pennsylvania Other	Summary Report QA Report NY ASP A Package NY ASP B Package NJDCKP Other	Standard Excel EDD EQUIS (Standard) NJDEP Reduced Deliverables NJDCKP Other	Compared to the following Regulation(s): (please fill in)
Sample Identification		Sample Matrix	Date/Time Sampled	Analysis Requested	
MU-1A <i>S. Sticker</i>	Gw	2/27/19	Na, Cl, SO <sub>4</sub> ,2, M+BC	3-10ml NaOH, 2.25ml	
MU-1B <i>S. Sticker</i>	Gw	2/27/19	Na, Cl, SO <sub>4</sub> ,2, NT BG	3-40ml NaOH, 2.35ml	
MU-2A <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
MU-2B <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
MU-3A <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
MU-3B <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
MU-4A <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
MU-4B <i>S. Sticker</i>	Gw	2/27/19	Na, Cl	2-250ml	
T-1 <i>T. Z</i>	Gw	2/27/19	Na, Cl	2-250ml	
T-2 <i>T. Z</i>	Gw	2/27/19	Na, Cl	2-250ml	
Comments:					
Preservation: (Check all that apply)					
<input checked="" type="checkbox"/> HCl <input type="checkbox"/> MeOH <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> ZnAc <input type="checkbox"/> Ascorbic Acid <input type="checkbox"/> Other: <i>T. Z.</i>					
Samples Relinquished by / Company		Date/Time	Samples Relinquished by / Company		
Received by / Company		Date/Time	Samples Received by / Company		
Relinquished by / Company		Date/Time	Samples Received in LAB by		
			DateTime		
			Temp. Received at Lab		
			Degrees C		

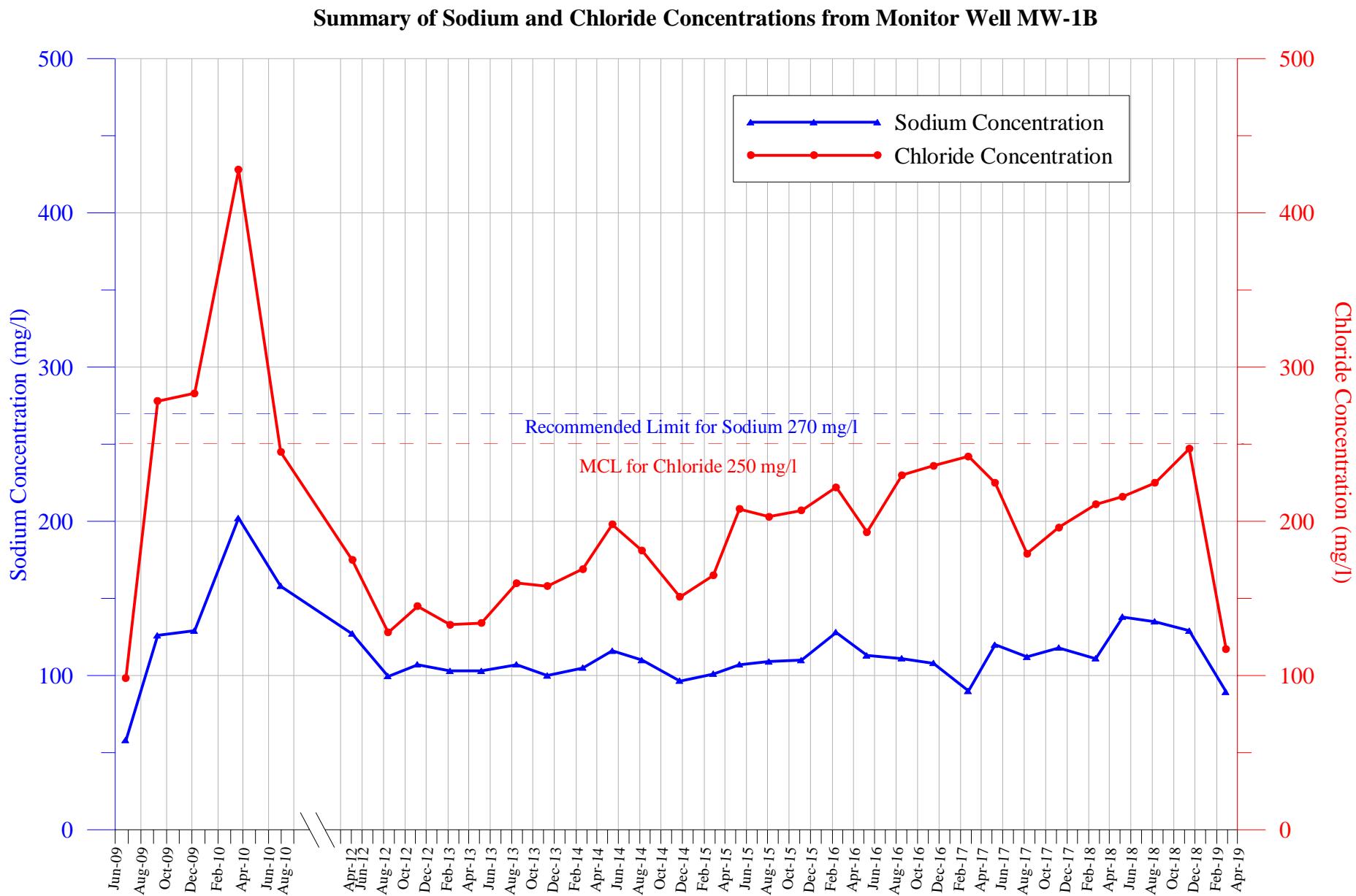


## **APPENDIX III**

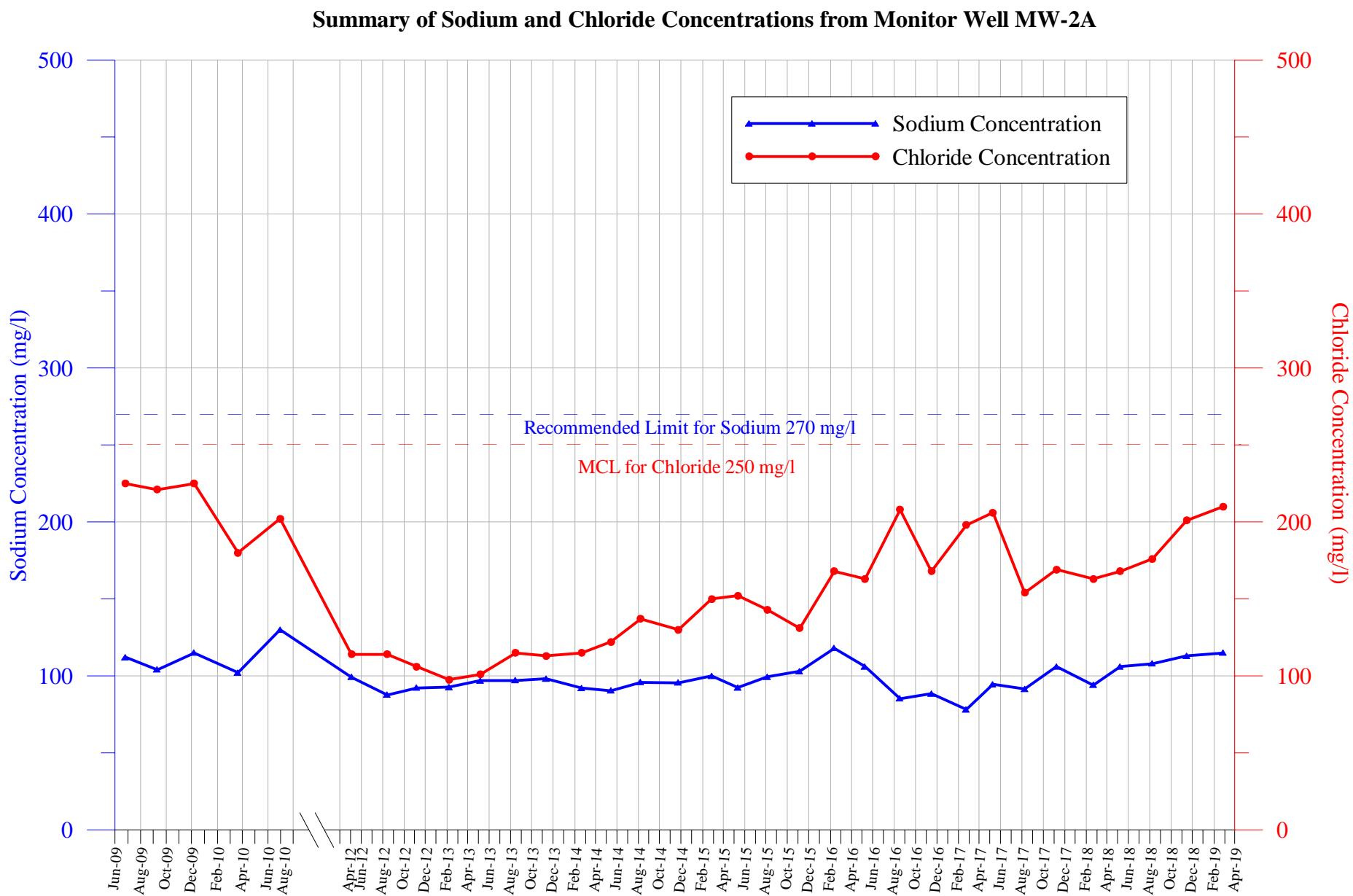
**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**



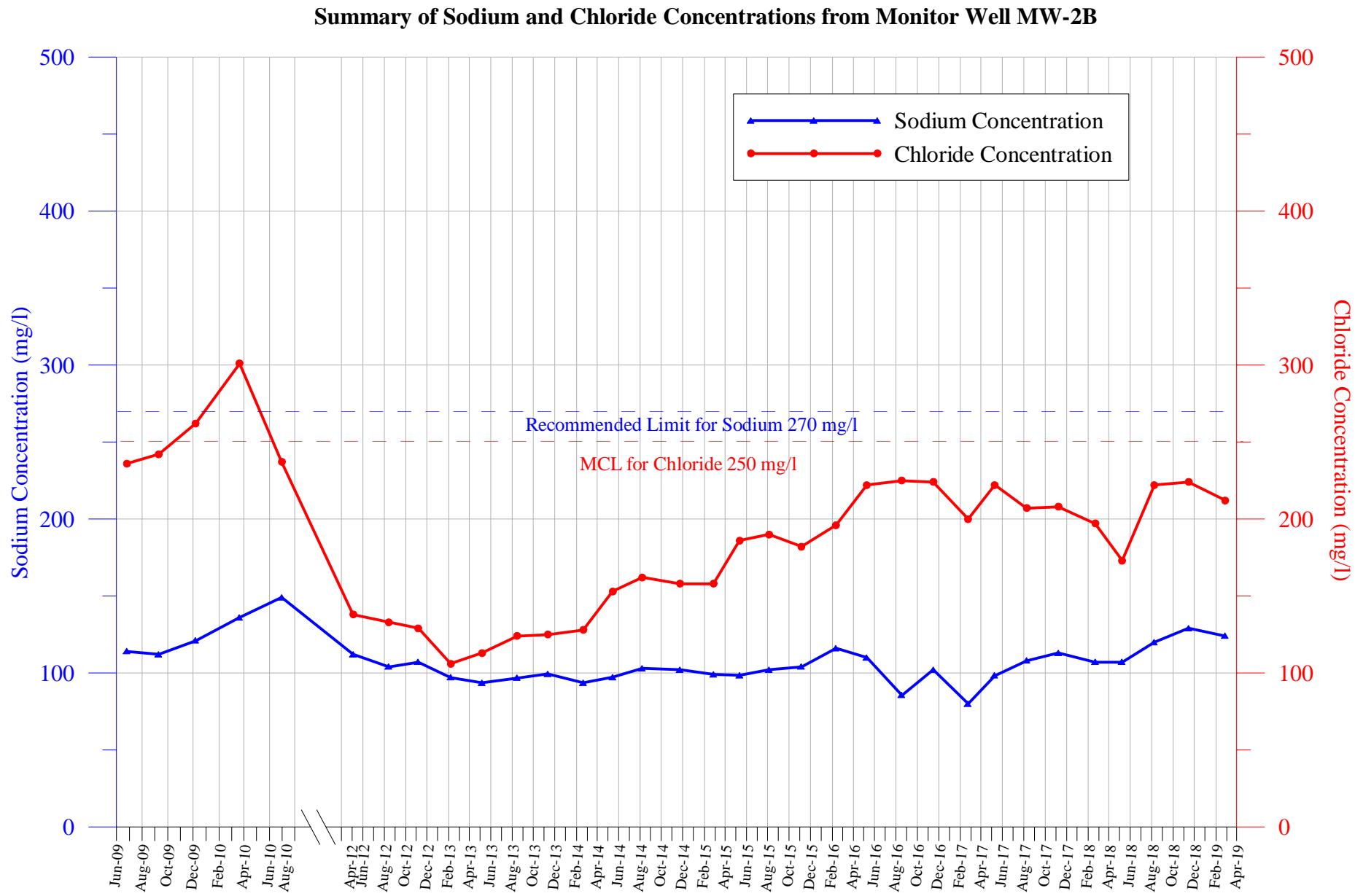
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TOWN OF FISHKILL, NEW YORK**



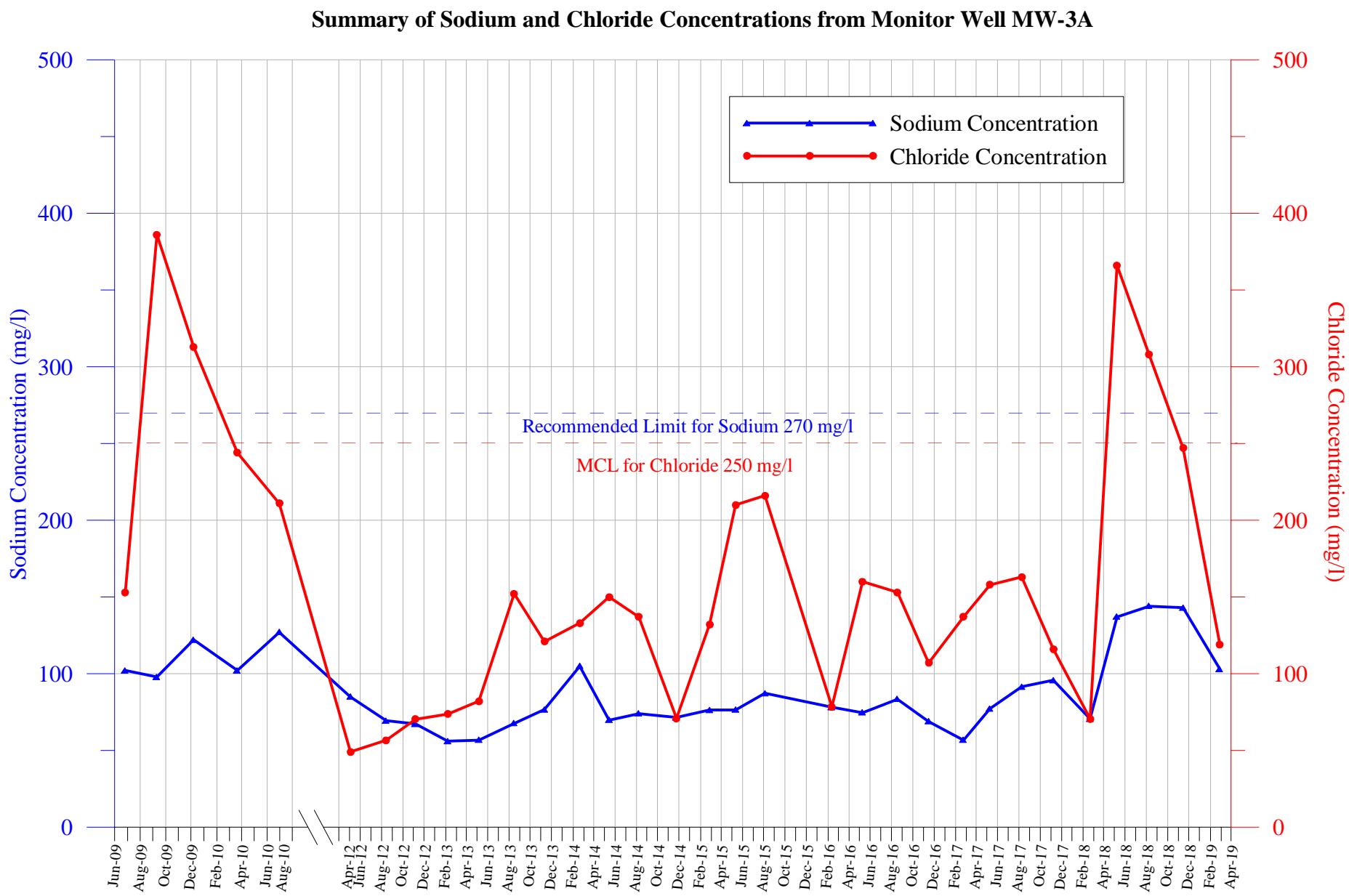
**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**



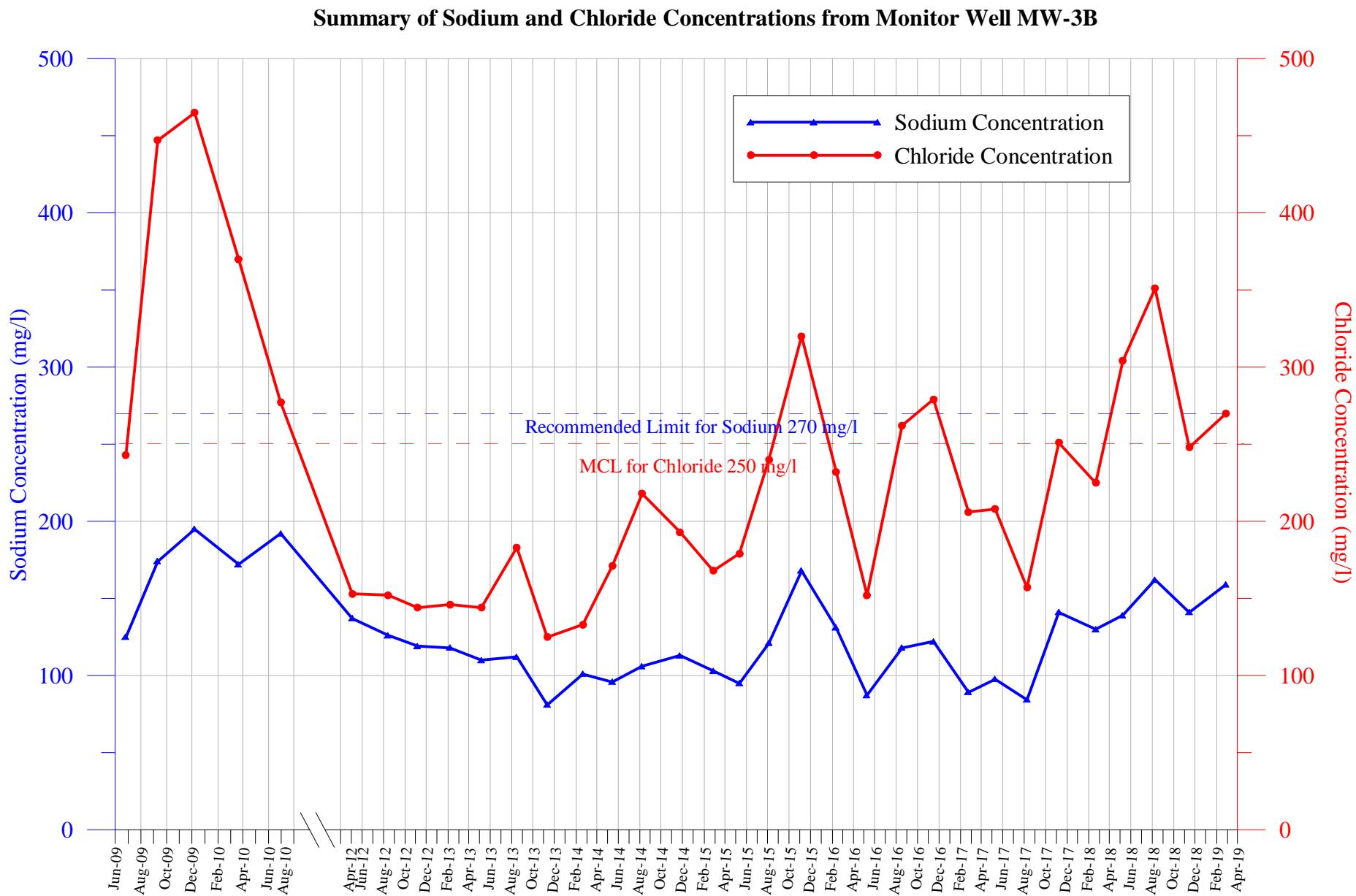
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TOWN OF FISHKILL, NEW YORK**



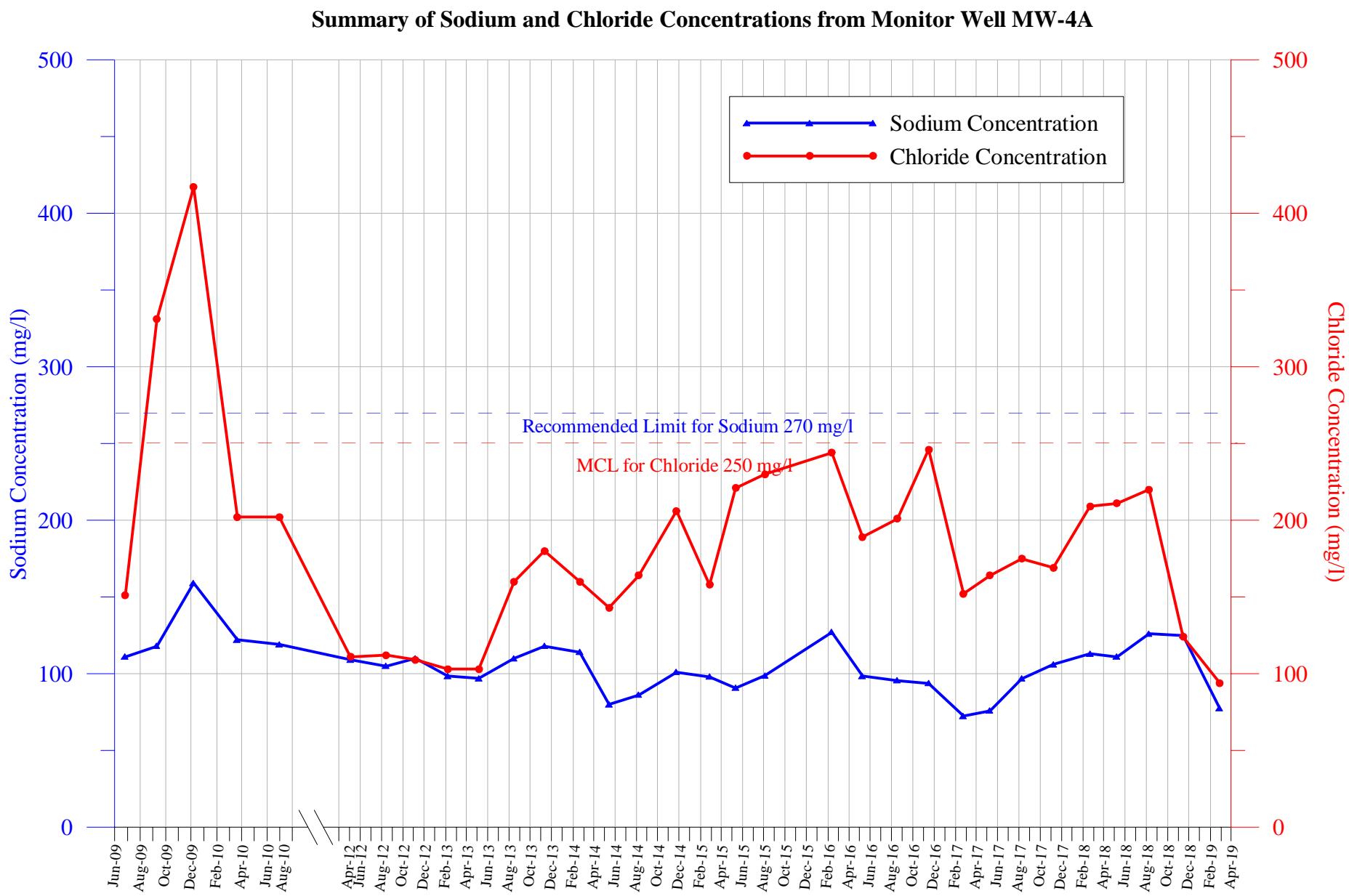
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TOWN OF FISHKILL, NEW YORK**



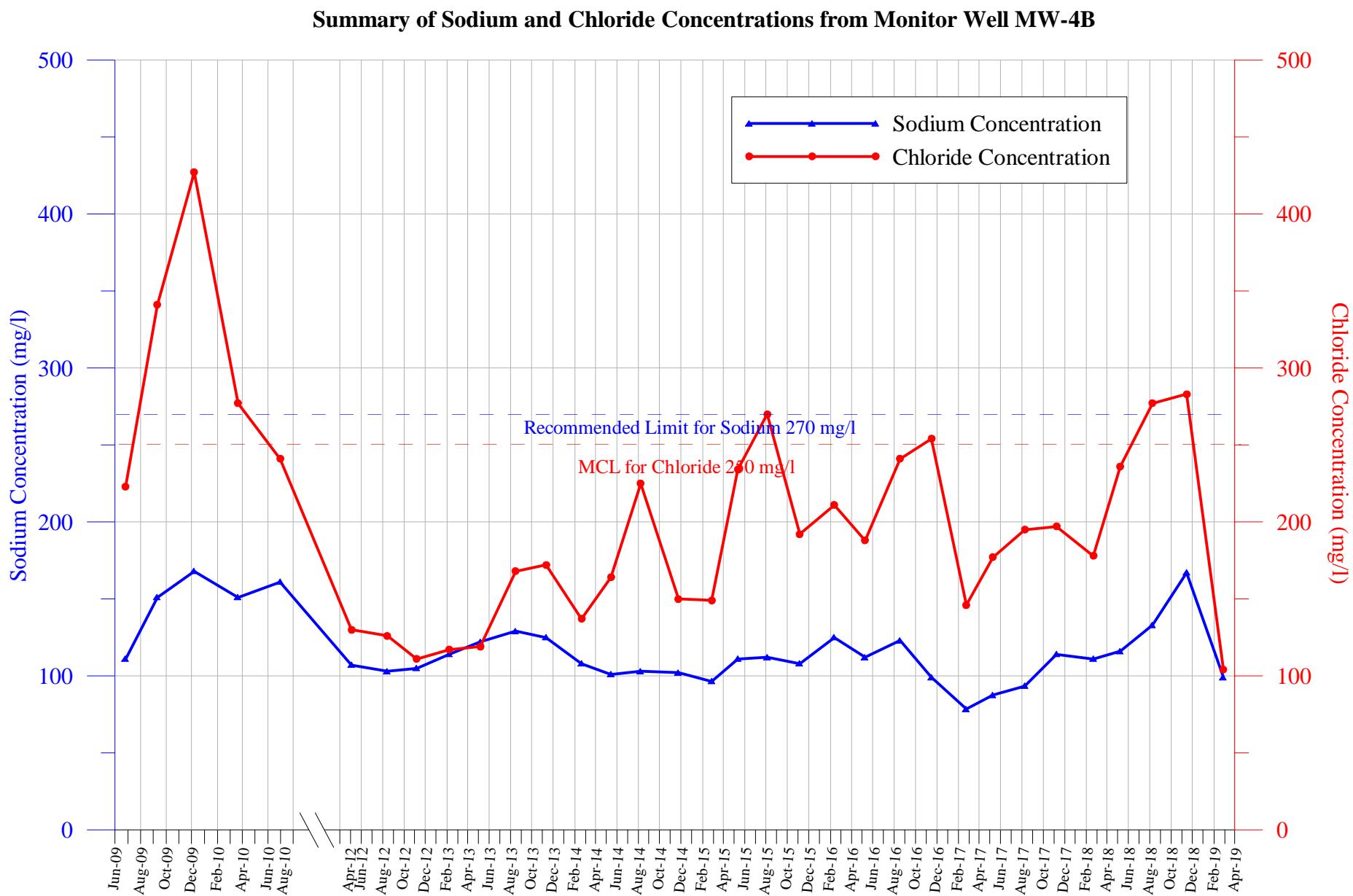
**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**



**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**



**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**

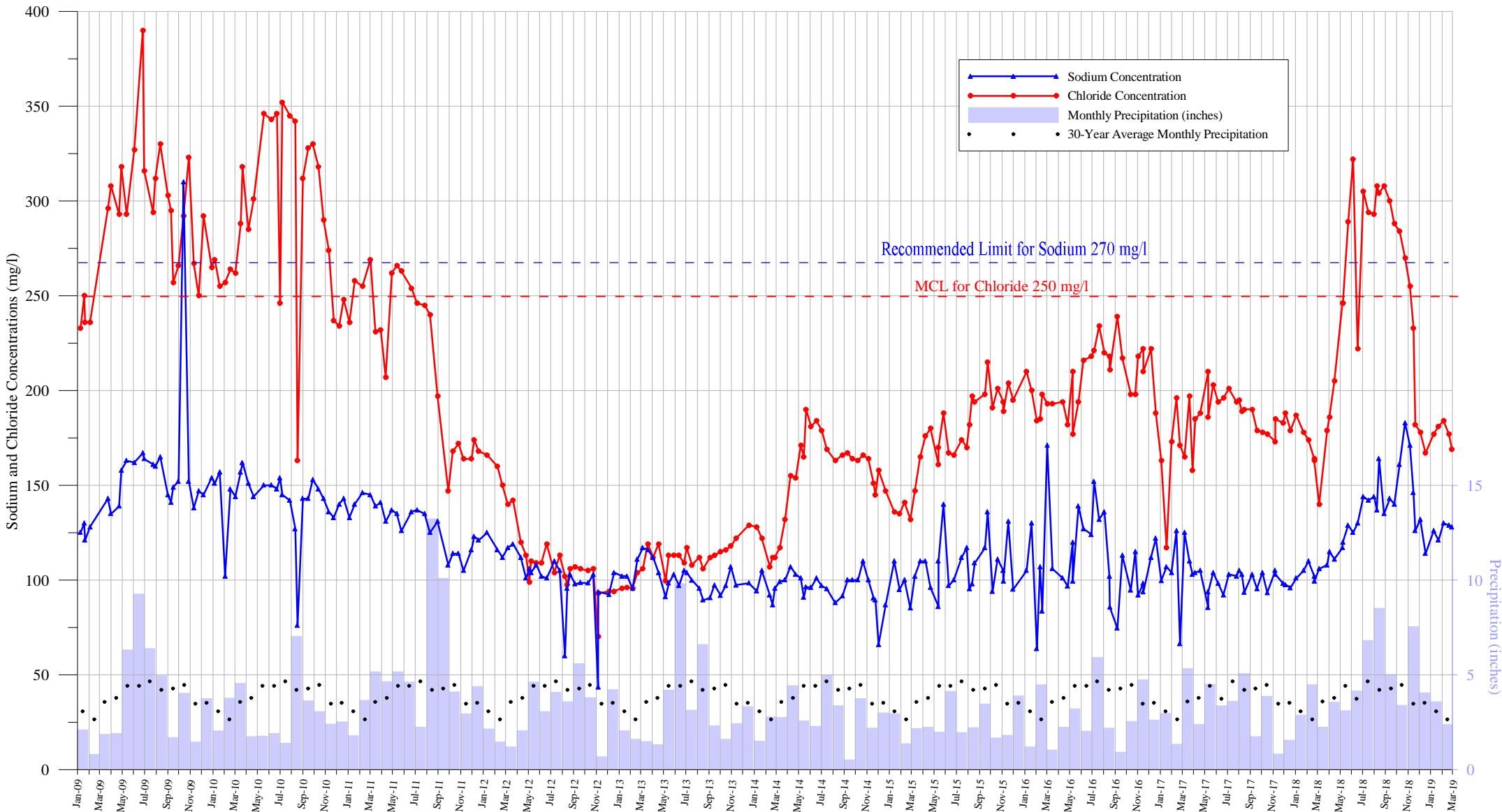




## **APPENDIX IV**

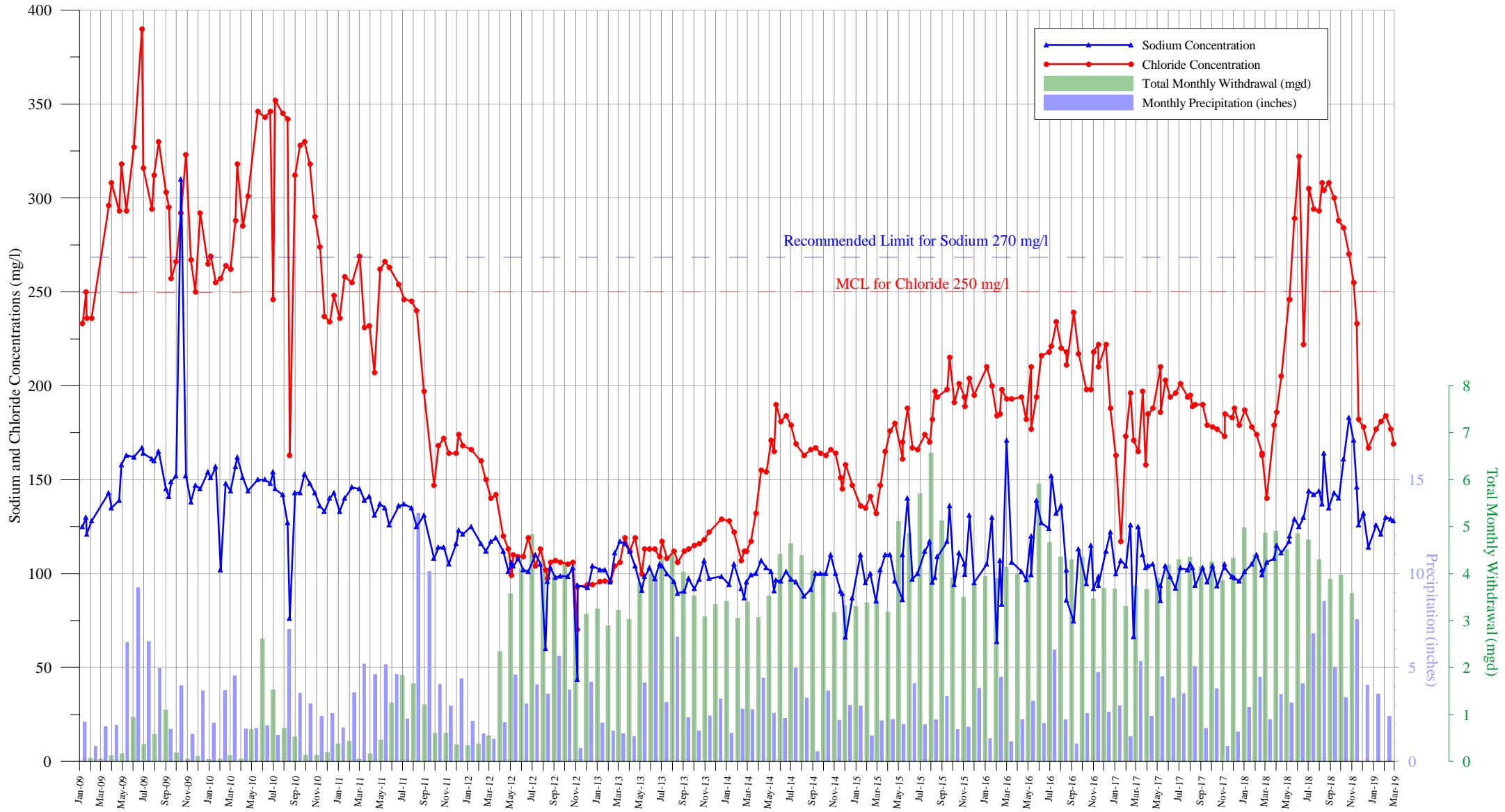
**SNOOK ROAD WELL FIELD**  
**TOWN OF FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Concentrations from Production Well T-1  
Compared with Monthly Precipitation Totals**



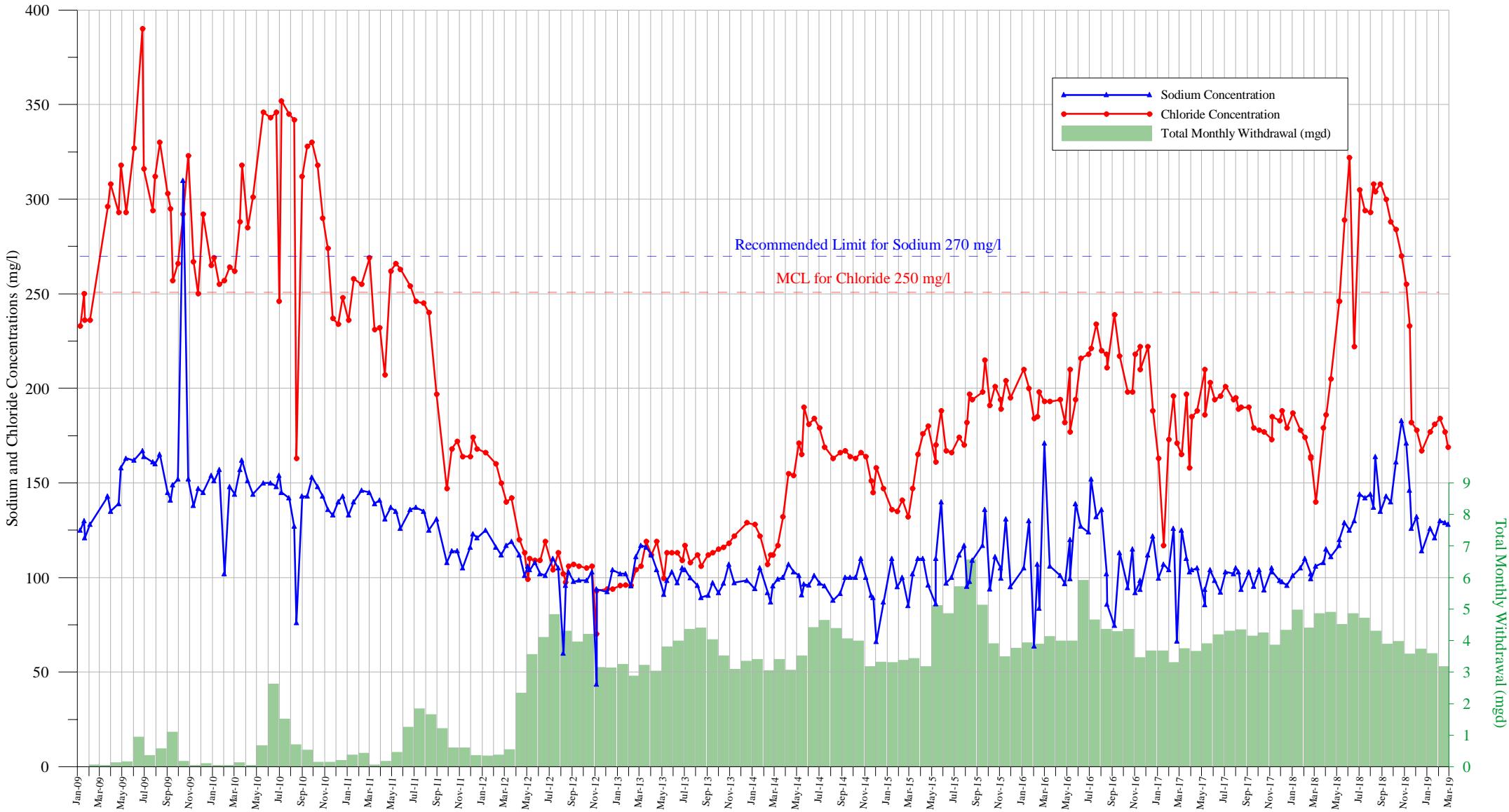
**SNOOK ROAD WELL FIELD**  
**TOWN OF FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Concentrations from Production Well T-1  
Compared with Monthly Precipitation and Pumping Withdrawal at the Well Field**



**SNOOK ROAD WELL FIELD**  
**TOWN OF FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Concentrations from Production Well T-1 Compared  
with Monthly Pumping Withdrawal at the Well Field**





## APPENDIX V

**SNOOK ROAD WELL FIELD  
TOWN OF FISHKILL, NEW YORK**

**Summary of Sodium and Chloride Concentrations from Production Well T-2  
Compared with Monthly Precipitation Totals**

